



# GEORGIA DAIRYFAX

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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.

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Sincerely,



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Sha Tao  
Assistant Professor

## CAES student wins UGA student employee of the year award

Aaron Brown

*(This article was extracted from <http://apps.caes.uga.edu/gafaces>; Aaron Brown is the student employment manager for the University of Georgia Career Center.)*



**Image:** *Kayla Alward, a Guyton Native majoring in Animal and Dairy Science at the University of Georgia.*

Many college students become nannies during school to help ends meet, but Kayla Alward - a rising fourth-year student at the University of Georgia - prefers to cow-sit.

Alward, a Guyton, Georgia, native who is majoring in animal and dairy science in the UGA College of Agricultural and Environmental Sciences, works as the calf caretaker at the CAES Teaching Dairy. The job - making sure the dairy's dozens of calves are safe and healthy - sometimes runs 24 hours a day, and her dedication to her charges earned her this year's Student Employee of the Year award from the UGA Career Center.

Alward was also the winner of the Southern Association of Student Employment Administrators' (SASEA) Student Employee Award, part of the SASEA regional competition, which covers student employees from 12 states. This is the first time a UGA student has won the regional award. She was presented with a check for \$1,000 from SASEA along with two plaques representing her UGA and regional wins.

There are more than 5,000 student workers on the university's Athens Campus, so the competition is very intense for these year-end awards, said Aaron Brown, student employment manager at the UGA Career Center.

"UGA departments function at a much higher level with the hard work and energy of students," Brown said.

As a student worker at the teaching dairy, Alward oversees the daily care of the calves, creates the schedules for other students who work at the dairy and develops treatment protocols for ailing calves.

"In other words, she is in charge of the next generation of the UGA Dairy Farm," said Mike Mathis, farm manager at the UGA Teaching Dairy. "This next generation currently exists as a group of newborns that require twice-daily bottle-feeding, constant monitoring, attention to detail and willingness to make tough decisions."

Mathis and Jillian Fain Bohlen, an assistant professor of animal and dairy science who uses the dairy for classes and for research, nominated Alward for the award.

For Mathis, it was fall 2015 when Alward's dedication to the dairy's Holsteins became fully evident.

A disease swept through the dairy's calf population, and Alward worked day and night treating her calves and nursing the ones she could back to health. She worked with UGA veterinarians to develop treatment programs for the calves and new biosecurity protocols to prevent that kind of outbreak from happening again. This included developing new treatment methods and new calf-worker routines as well as implementing a biosecurity program and strategic design methods to reduce spread of the illness.

"Few other student employment opportunities require this level of dedication and heart," Mathis said. "Punching in and out of the clock did not matter to Kayla; these calves were her responsibility and she stayed the course unrelentingly."

Alward, who lives on the dairy farm, often fills in for other students who miss their calf-care shifts. As the resident caretaker, she is responsible for checking on cows in the early mornings and late at night during calving season.

In addition to working with animals, she also manages the farm's records and maintains the herd's registration with Holstein Association USA.

After graduation, Alward plans to attend graduate school for dairy reproductive physiology. She is a 2013 graduate of South Effingham High School in Guyton, Georgia.

## **Herd it through the bovine**

*Youth Corner*

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### **State 4-H Dairy Quiz Bowl Competition**

Saturday, June 4<sup>th</sup> was a fun and exciting day of Dairy Quiz Bowl in Athens, GA. An event like no other offered to dairy youth, dairy quiz bowl is a true test of pure dairy knowledge. Also unique, Dairy Quiz Bowl allows young people the opportunity to work as a team and individually while competing in each round. Below are some example questions from this year's contest - do you know the answers?

#### Junior Division

- What are two methods that can be used to appropriately store colostrum?
- Approximately how many pounds of milk does it take to make a pound of cheddar cheese?
- What is the term given to a quarter that permanently does not secrete milk?
- During which season do cows have the lowest pregnancy rates?
- Which compartment of the ruminant stomach traps foreign objects such as nails and wire that may be eaten?

#### Senior Division

- A cow in your herd has had three bull calves. She is in the close up pen getting ready to have her fourth calf. What is the percent likelihood that this too will be a bull calf?
- What is the common name for digital dermatitis?
- What federal milk marketing order is Georgia a part of?
- What are two milking parlor practices that can reduce the spread of contagious forms of mastitis?
- The loss of what mineral in feces is the main cause of dehydration in scouring calves?

How well did you do? This year, the junior team that was able to correctly answer most of these questions as well as others like them was from Oconee County. The senior team that proved themselves during the test, team questions, and toss up questions in a double elimination tournament was the team from Oconee County. Please congratulate these teams from Oconee on their 2016 State 4-H Dairy Quiz Bowl victories! The senior team will travel to the North American International Livestock Exposition in November to compete for the national title!

Oconee County Junior Team Members: Robie Lucas, Neely McCommons, Emma Newberry and Kalani Washington

Oconee County Senior Team Members: G.W. Hendrix, Quintin Lowder, Lora Nedza and Brantley Saye



**Image:** *Junior and senior teams from the 2016 State 4-H Dairy Quiz Bowl*

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### **Southeast Dairy Youth Retreat**

The Southeast Dairy Youth Retreat is just a few weeks away! Hosted in Maggie Valley, NC on July 10<sup>th</sup> – 14<sup>th</sup>, this retreat promises learning, fun, and the opportunity to make new friends with young people across the southeast! This year, Georgia will send 16 young people to the retreat to learn about the dairy industry and agriculture in North Carolina. Our youth participants this year come from all over the state from Waynesboro to Marietta and Senoia to Leesburg. Thank you to the tremendous chaperones for volunteering their time to attend this year’s retreat with these young people, Bobby Smith – UGA Extension Northeast District Program Coordinator, Trey Gafnea – Jasper County Extension Agent, and Chris Ritts – Georgia 4-H volunteer from Coweta County.

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### **Upcoming Dates – Mark your Calendars**

#### National 4-H Dairy Conference

- October 2<sup>nd</sup> – 5<sup>th</sup>
- Please be on the lookout for more information at the “Georgia 4-H Dairy Youth Programs” Facebook page and on the “Dairy On” UGA Extension Blog. We will select 2-3 delegates to represent Georgia at this national event. For these delegates, all registration and travel costs will be covered.

#### Georgia National Fair Junior Commercial Dairy Heifer Show

- Weigh in on October 8<sup>th</sup> with Show Day on October 9<sup>th</sup>

#### Georgia National Fair Junior and Open Shows

- Showing October 15<sup>th</sup> and 16<sup>th</sup>
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## **Dairy dawgs on the mooove**

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The Dairy Dawgs had a busy spring semester. Below is quick list of what all they have been up to and what's on the schedule for this summer!

- Hosted the 19<sup>th</sup> annual UGA Commercial Dairy Heifer Show
  - February 6<sup>th</sup>
  - 225 heifers exhibited by 190 youth
  
- Hosted the 2016 Southern Regional American Dairy Science Association Student Affiliate Division (ADSA-SAD) meetings
  - February 25-27<sup>th</sup>
  - Over 70 students in attendance from 9 different universities
  - Registration and Social on Thursday night, Competitions on Friday with Dinner at the Iconic downtown restaurant “The Grill” and Ice Skating at the Classic Center to follow. Saturday was farm tours – Harmony Grove Dairy owned by the Coble family, Birdsville Dairy owned by Beryl Landis, and Hillcrest Dairy owned by the Rodgers family. The event concluded with a banquet that evening with guest speakers Everett and Carol Williams
  
- 53<sup>rd</sup> Annual UGA Spring Dairy Show
  - March 26<sup>th</sup>
  - Thirteen UGA Students competed with UGA Dairy Farm animals
  
- 2016 North American Intercollegiate Dairy Academy
  - April 7<sup>th</sup> – 9<sup>th</sup> in Syracuse, NY
  - Six students attended the Dairy Academy
  
- Spring 2016 Dairy Science Students
  - Lark Widener – graduated with Master of Science in Dairy Science
    - Project Title “The Impact of an IBR MLV on Estrous Cycle Parameters, Anti Müllerian Hormone Concentrations, and the Inflammatory Profile of Nulliparous Heifers”
  - Six students graduated with a major in Dairy Science at the Spring Commencement
  - Growth in Dairy Science Major Spring 2015 – Spring 2016 = 36.4%
  
- National ADSA-SAD July
  - July 17<sup>th</sup>-22<sup>nd</sup> in Salt Lake City, UT
  - Five undergraduate students and one graduate student attending
  - Numerous Competitions (scrapbook, website, quiz bowl) and will be presenting the following talks as part of the national meetings.



- *Influence of a BRDC vaccine with a MLV or KV IBR component on estrous cycle parameters and anti-müllerian hormone concentration in nulliparous heifers.* **C. Lark Widener**, David J. Hurley, William M. Graves, Andra H. Nelson, Daniela A. L. Lourenco and Jillian F. Bohlen.
- *Impact of a BRDC vaccine with a MLV or KV IBR component on the innate inflammatory profile of nulliparous heifers.* **C. Lark Widener**, David J. Hurley, William M. Graves, Andra H. Nelson, Daniela A. L. Lourenco and Jillian F. Bohlen.
- *Assessing the correlation between teat end scores and presence of mastitis in lactating Holstein cows.* **Kayla J. Alward**, Jillian F. Bohlen, Lane O. Ely and Stephen C. Nickerson.
- *A future for genomics in animal health through the Bovine Respiratory Disease Complex: Coordinated Agricultural Project.* **Sarah J. Thomsen** and Jillian F. Bohlen, University of Georgia, Athens, GA



**Image:** 2015-2016 UGA Dairy Science Club

## **Managing milk production seasonality**

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Seasonality in milk production is the result of excess milk production in the spring and inadequate milk production in the fall relative to demand. The seasonal pattern of milk production for Georgia for the period of 2009 through 2015 is presented in Figure 1. From a production standpoint, it is much easier to produce milk in the spring when there is no heat stress and there is lush grazing available. In contrast, it is a challenge to get good milk production in the fall primarily because of the negative effects of heat stress on dairy cows.

This is not a new issue for Georgia producers, or the US from that standpoint. When I first came to Georgia in 1977, a base program was used as an incentive to stimulate fall production and discourage spring production but that did not solve the problem. At that time there were cheese and powder plants in the Southeast that operated seasonally to help balance the supply, but these have been closed as they were not cost efficient to operate as milk production in the Southeast declined. If we compare production in the spring (April, March and May) with fall (August, September and October), the difference (seasonality) has declined slightly in the last two years, but was still 18% in 2015 based on total Georgia milk production (Figure 2).

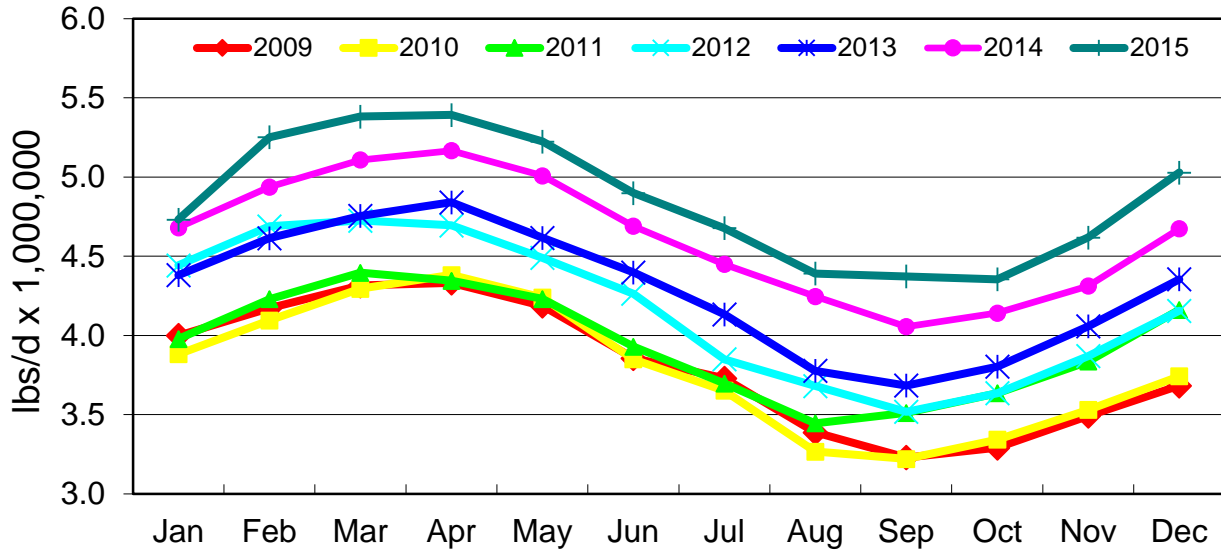
Today some cooperatives are offering incentives up to \$0.40/cwt for producers who reduce their seasonality to 1% or less. In the long run, reducing seasonality will save all producers given the cost for balancing supply with demand will be reduced. In the spring, milk is shipped out of the Southeast market to a plant that agrees to buy at it for processing. With many plants dumping milk because they do not have adequate capacity to process the local supply, the price is lower than desired even before including the transportation cost to get it to that plant. In contrast, during the fall when milk supplies are typically tighter a premium is often required to free up milk so it can be shipped to Southeast plants to meet the fluid milk processing needs. Both situations cost additional revenue reducing funds available to pay for the milk that is produced and processed in the Southeast.

As stated earlier, the most significant challenges for increasing milk production in the fall is heat stress. Many producers have greatly improved facilities to provide heat stress abatement (cooling) for the lactating cows, but most have not made similar improvements for dry cows. Research has repeatedly shown that providing supplemental cooling to dry cows maintains higher feed intake, improves immunity, reduces metabolic disease, and increases milk yield. Given the chronic nature of heat stress in the Southeast and the duration (April through October), producers must address this as part of their plan to successfully reduce seasonality.

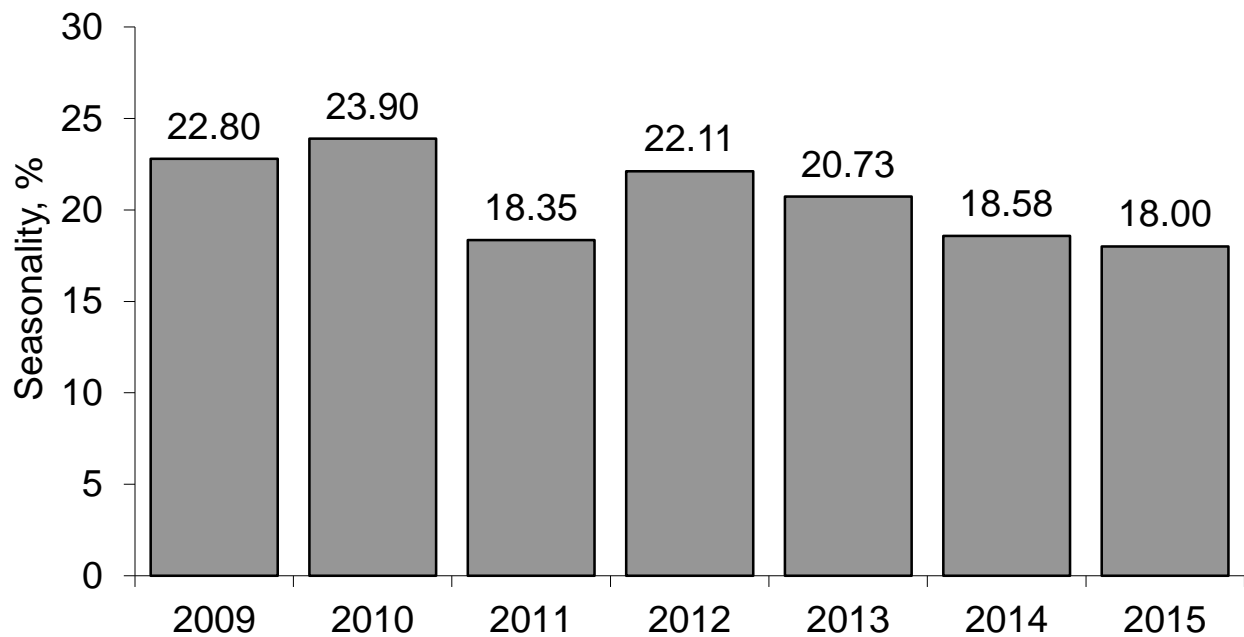
Building a new facility for dry cows would be ideal, but with current milk prices this is not a practical option for most in the short run. Long term, this should be considered. If there is extra space in existing freestall barns that could be used for housing dry cows, gates could be added to block off a section to house dry cows separate from the lactating cows in the short term. You must make sure that the divider will prevent the dry cows from comingling with the lactating cows to avoid issues related to antibiotic contamination from milking a dry cow or the dry cow eating the lactating cow diet that could cause metabolic problems at calving. Another possible option would



be to modify barns used to house equipment or hay with fans and sprinklers or misters to provide cooling until milk markets improve. This is something that can be done immediately without excessive expense until better facilities can be designed and constructed. This is not ideal as waste handling and cow movement will be less than ideal. While it is desirable to keep equipment in a shelter out of the weather, the payback for cooling cows will be much greater in the short term. At a minimum, add additional shade structures with fans and misters to cool the dry cows. Consider your options and develop budgets to evaluate the cost of modifications and potential revenue for reducing seasonality and improving overall health and performance to help determine what the best course of action will be.



**Figure 1.** Georgia milk production (lbs/d X 1,000,000).



**Figure 2.** Seasonality in Georgia milk production.

Once facilities are available to provide cooling for dry cows, the calving schedule of the herd can be shifted for more cows to calve in late summer and fall. Shifting the calving schedule will take time unless cows are purchased that are bred to calve during this time frame. Heifers can be bred to calve during the late summer which for many will be a quicker and easier route to shift the calving schedule. While heifers do not suffer from heat stress as much as mature cows, they still benefit from heat stress abatement prior to calving to minimize the negative effects of heat stress. The use of shades provides some relief, but adding fans and misters helps provide more cooling. If using fans and misters, care must be taken to prevent the ground under the shade from becoming wet and muddy.

Feeding programs to support fall calving (as well as during the summer to minimize heat stress) must be based on high quality forage to optimize intake. Maintaining intake provides more nutrients to support milk production and reduces the amount of heat generated by fermentation in the rumen. If high quality forage is not readily available, high-fiber byproduct should be incorporated into the diet to maintain digestible fiber concentrations rations without overfeeding starch. High quality protein supplements should be fed to minimize ammonia production during fermentation. Concentrations of minerals and vitamins should be adjusted for intake to meet the requirements of the cow. Producers should also evaluate water supply and quality to insure cows have unlimited access to fresh, clean water.

Seasonality programs to help balance milk supply offer an opportunity for producers to increase the total income received from the sale of their milk. Unless you have the facilities to minimize heat stress and can purchase animals to reduce seasonality, you should evaluate the options you have short term to reduce seasonality while longer term plans are developed.

## Pasteurized vs. raw milk consumption: The controversy continues

Stephen C. Nickerson, Ph.D.

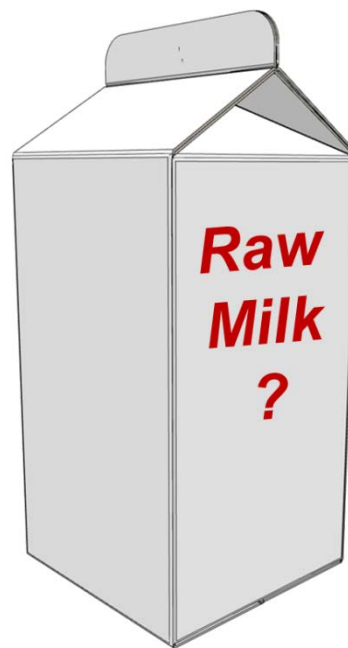
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The consumption of raw milk has gained considerable popularity in recent years, yet this practice remains a source of great debate regarding potential health impacts. The FDA and CDC have emphasized the risk of contracting foodborne diseases from the presence of human pathogens in raw milk. Between 1998 and 2011, there were 148 outbreaks associated with raw milk and raw milk products, resulting in 2,348 illnesses, 284 hospitalizations, and 2 deaths. It is estimated that no more than 1% of the milk consumed in the U.S. is raw; however, according to the CDC, the number of outbreaks caused by raw milk is at least 150 times greater than that caused by pasteurized milk. For these reasons, the FDA, CDC, American Veterinary Medical Association, university cooperative extension programs, and many other organizations recommend that all fluid raw milk destined for human consumption be pasteurized.

Recent surveys report that the prevalence of pathogens is as high as 13% for bacteria such as *Campylobacter jejuni* and *Listeria monocytogenes*. Considering that it only takes 5-10 bacterial cells to cause foodborne disease, the prevalence of these pathogens is of great concern. Another important consideration is that raw milk can be contaminated with pathogens even when the cow is healthy and her milk appears normal. These pathogens can originate in the udder, or more commonly, originate from post-harvest contamination. The presence of these pathogens is simply an inherent risk associated with the production of milk, and not necessarily associated with cleanliness of the farm, whether cows are on pasture or confined, or how often or how well the producer cleans the milking equipment.



Despite the proven health benefits of pasteurization, some consumers still seek to purchase unpasteurized or raw milk. Consumers of raw milk report that they prefer the taste, suggest increased nutritional value, and feel there are added health benefits from consuming bacteria present in raw milk. Although raw milk can contain non-harmful bacteria, the risk for pathogenic bacteria is of greater concern for human health. If consumers are interested in consumption of beneficial bacteria for gut health, they should consider products containing live cultures such as yogurt and kefir. Furthermore, numerous studies have reported no significant difference in the nutritional content of milk following pasteurization.

In the end, dairy producers take extreme caution to

ensure that the milk they sell is of the highest quality with the lowest bacterial load possible. However, raw milk is still not inherently safe to drink, despite these extreme control measures. Foodborne diseases from drinking raw milk can result from the consumption of only a few bacterial cells, can originate from milk that looks and appears normal, and can come from cows that are healthy and raised on farms that are clean. The beneficial health claims from consuming raw milk do not have scientific merit, and the risks far outweigh any potential benefits. Pasteurized milk is an excellent, nutritious, and safe product containing many essential nutrients, especially for children, and its consumption is encouraged.

## **Antibiotics in calf milk replacer – worth it?**

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It is not uncommon for dairy producers to request that medications be added to powdered calf milk replacer fed to dairy replacement heifers. According to the 2014 NAHMS Survey (USDA, 2014a), more than one third of operations fed some type of medicated replacer. Some medications are included for the control of coccidia (Deccox, Bovatec, Rumensin), the control of flies (Clarifly), or for the control or treatment of diarrhea and pneumonia (neomycin, tetracycline). Nine percent of operations (representing 11% of all calves) reported feeding neomycin and oxytetracycline (USDA, 2014a). Because these medications are delivered in feed, the FDA has stringent regulations on how they are used (and how they are combined). For example, no extra-label use is allowed for feed-grade medications, even under the direction of a veterinarian. Label directions must be followed exactly, and withdrawal periods should be followed before marketing an animal that has consumed that feed.

### **Regulatory changes**

Antimicrobial use in cattle has been under increased public and regulatory scrutiny lately, since it is implicated in the development bacterial antimicrobial resistance and could cause violative milk and tissue residues. The FDA changed the rules on the inclusion of the antimicrobials used in milk replacers in 2010, and will change the rules again in January of 2017. The current rules allow producers to obtain oxytetracycline and neomycin over the counter (OTC) to be used in combination in a 1:1 ratio at two different levels:

- The low level inclusion (0.05-0.1 mg/ lb/day) is labeled to be fed continuously “for increased rate of gain and improved feed efficiency”. This dose does not have a withdrawal period.
- The higher dose (10 mg / lb/day) is to be fed for 7-14 days “for treatment of bacterial pneumonia (shipping fever complex) caused by *Pasteurella multocida* susceptible to oxytetracycline, and for the treatment and control of colibacillosis (bacterial enteritis) caused by *Escherichia coli* susceptible to neomycin.” The higher inclusion has a slaughter withdrawal period of 5 days, and is not intended to be fed to calves to be processed for veal.

Starting January 2017, the FDA will be enforcing new regulations that will no longer allow the lower inclusion rate for improved rate of gain and feed efficiency. The higher inclusion will still be allowed, but this will no longer be OTC and will require a Veterinary Feed Directive (VFD) for these antimicrobials to be included in milk replacer. A VFD is similar to a veterinary drug prescription, and will require oversight of a licensed veterinarian and a valid Veterinary Client Patient Relationship (VCPR). The added regulations also mean added paperwork and potential liability, which may not outweigh their questionable benefit for the prevention and treatment of diarrhea and pneumonia.

### **Residue risks**

Many labels for medicated milk replacers include the phrase “do not use in calves to be processed for veal.” The USDA has strict definitions of classes of cattle, and the classes for calves can change very quickly depending on the owner’s desire. With changes in calf prices and feed



prices, producers who buy and sell calves may decide to harvest a calf as bob veal (less than 150 pounds), raise it as formula-fed veal (around 450 to 500 lbs), or raise it to typical beef slaughter weight (1200-1500 lbs). What happens to a calf after it leaves a farm is usually unknown and how it is managed before it leaves can add liability to its original and new owner, especially as animal identification and traceability improves. A calf that receives a meal of medicated milk replacer can be harvested as bob veal within a few days, which would not allow a proper slaughter withdrawal, and probably result in a violative residue. Bob veal calves are responsible for a disproportionate number of drug residue violations. In 2014, 25% of violative residues in cattle were found in bob veal calves (USDA, 2014b), most of which were due to neomycin and oxytetracycline.

### **Efficacy**

The addition of neomycin and oxytetracycline to milk replacers is common practice, but has not been proven to be effective within modern housing and nutrition programs for calves. Studies done in the 1960's and 1970's showed some benefits to including these in milk replacer at low levels, but newer studies have not replicated these results, and have even shown the opposite effect (Smith, 2013). A more recent study on a California calf ranch, where calves had varying levels of passive transfer, and were fed 2 quarts of a 23% protein and 18% fat milk replacer twice a day, showed a positive effect of feeding oxytetracycline and neomycin at 10mg/lb/day (Berge et al., 2005). The study concluded that in this group of environmentally and disease challenged calves, "the use of antibiotics in milk replacer was associated with decreased morbidity and increased weight gain." It should be noted that the overall mortality was 21 calves out of 120 (17.5%) over a 28 day period, and the weight gain in each group ranged from around 5 pounds to 11 pounds (0.2 pounds per day to 0.4 pounds per day). These outcomes were likely due to the management of calf ranch calves both before they arrived at the calf ranch (poor colostrum management, transportation, and comingling), as well as unusual environmental conditions during the trial that resulted in increased disease pressure. Several calves that died cultured positive for a multiple-antibiotic resistant strain of *Salmonella newport*. Another study (Berge et al., 2009) was done by the same research group on a farm with low calf mortality (<3%), better colostrum management, and that fed 2 quarts twice a day of pasteurized non-saleable milk. In that study, calves fed neomycin and tetracycline had 28% higher risk of diarrhea compared to calves not fed neomycin and tetracycline. The average daily gain in calves fed antibiotics in milk and those not fed antibiotics was not different (both around 0.6 pounds per day). These contrasting results show that management factors other than the inclusion of antibiotics in feed really drive the outcomes of health and growth.

The label claim for oxytetracycline in milk replacer for the treatment of respiratory disease is not well supported by research. The FDA approval requirements for this drug to prove efficacy only require that a drug show bioequivalence to an older approved drug, so many formulations for oral use have been piggybacked onto older drugs with very little data. A meta-analysis done on the treatment of bovine respiratory disease in beef cattle showed that injectable oxytetracycline was ranked as the worst antimicrobial of those examined, and was not statistically better than a non-active control (O'Connor et al., 2013). Part of the low efficacy could be due to resistance, but variable gut absorption could also be to blame. A recent study found tetracycline resistance to be very common in *Pasteurella multocida* recovered from cattle with respiratory disease (Welsh et al., 2004). Today, there are much better choices of antimicrobials for the treatment of calves with pneumonia, and injectable products that reduce the variability of absorption through the gut are

preferred over oral products.

### **Antimicrobial resistance**

Exposure of any bacterial population to antimicrobials selects for those bacteria that can survive, which then pass their genetic resistance mechanisms to their offspring, and also to neighboring bacteria through the process of conjugation. Animal agriculture has been implicated as one source of the development of antimicrobial resistance, and recent regulatory changes have attempted to mitigate that risk. Resistant organisms on the farm reduce the efficacy of our treatment of sick calves, and can also be transmitted to calf caretakers and their families and cause significant disease.

A recent study in New York (Pereira et al., 2011) showed that most fecal *E. coli* isolates were resistant to tetracycline, ampicillin, streptomycin, and sulfamethoxazole-trimethoprim, and the isolates from a farm that fed sulfamethazine and chlortetracycline in milk replacer had higher levels of resistance. Another study (Kaneene et al., 2009) evaluated resistance patterns in *E. coli*, *Salmonella*, and *Campylobacter* cultured from calf feces, calf pens, and maternity pens on dairy farms before and after removing oxytetracycline and neomycin in calf milk replacer. They showed that herds that stopped feeding antibiotics in milk replacer had “greater decreases in multi-drug resistance than control herds.” This shows that although feeding antibiotics in milk replacer can contribute to antimicrobial resistance, we can probably reverse the trend with management changes. Much more work is on-going in the area of antimicrobial resistance in calves, and the feeding of antimicrobials is likely to be a significant risk factor for its development.

### **Recommendations**

Based on the risk of residues, the questionable efficacy in properly managed calves and the risk of contributing to resistance, the addition of 10mg/lb of oxytetracycline and neomycin cannot be recommended as a blanket management approach. If a producer is battling enteric or respiratory disease in a group of calves, the risk factors for disease should be addressed before jumping to antibiotic treatment. First, the colostrum program should be evaluated, including the collection, testing, temperature control, and delivery of colostrum. Then, the feeding program should be evaluated, especially the energy content of milk provided to calves, taking into consideration the size of the calves and the environmental temperature. A spreadsheet to calculate energy needs and energy supplied by milk replacer is available on the UGA Food Animal Health and Management Program website ([www.vet.uga.edu/foodanimal](http://www.vet.uga.edu/foodanimal)). There may, however, be times when the addition of these antimicrobials may be of benefit, and the risks and benefits and the implementation strategy should be discussed by the herd management team, including the herd veterinarian. When appropriate, other means of delivering antimicrobials to sick calves should be considered.

If you decide to feed a medicated milk replacer with oxytetracycline and neomycin to a group of calves, the first step is to ensure that a valid VCPR is in place. The label directions must be followed exactly, including the dose prescribed. This will have to be calculated based on the inclusion in powder and the amount of replacer fed per calf per day. Proper animal identification and slaughter withdrawal must be followed before any animals are marketed, and the paperwork must be kept for a minimum of two years. This strategy should only be viewed as a temporary approach while the calf management plan is improved.

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## Vaccinating the pre-breeding heifer

### *A focus on the Bovine Respiratory Disease Complex*

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A trial was recently completed at the UGA Teaching Dairy in Athens, GA to evaluate the impact of vaccinating breeding age, virgin heifers with a bovine respiratory disease complex (BRDC) vaccine containing a modified live component on reproduction. The BRDC is a group of pathogens that impact animals all over the world and include viral components - bovine respiratory syncytial virus (BRSV), parainfluenza 3 (PI3), bovine viral diarrhea (BVD) and infectious bovine rhinotracheitis (IBR) as well as bacterial components - *Mannheimia haemolytica*, *Pastuerella multocoda*, and *Mycoplasma bovis*. Maintaining an adequate and appropriate vaccination program against the pathogens in the BRDC is vital to the economic health of a dairy farm. Profitability may be impacted directly through induced systematic respiratory infection that can impact productivity and lead to death, but can also be impacted more indirectly through their association with mid- to late-gestation abortion in pregnant animals (Anderson, 2007).

A 2007 report by the USDA indicates that approximately 75% of herds across the U.S. vaccinate heifers for BVD, a part of the BRDC. Vaccination rates of other monitored BRDC pathogens are similar to that of BVD as they are often packaged together in a singular vaccine. Of the herds vaccinated for BVD in the 2007 report, approximately 43% used a killed vaccine (KV) and the remaining 62% used a vaccine with some modified live component in the vaccine (MLV) to vaccinate heifers. When looking at these same herds and their BRDC vaccine use in cows, the trend flipped with approximately 56% of herds administering KV to cows and 49% choosing MLV (Table 1).

**Table 1:** *Type of BVD vaccine administered by herds in 2007. Source: Dairy 2007: Biosecurity practices on U.S. Dairy Operations, published by the USDA Animal and Plant Health Inspection Service*

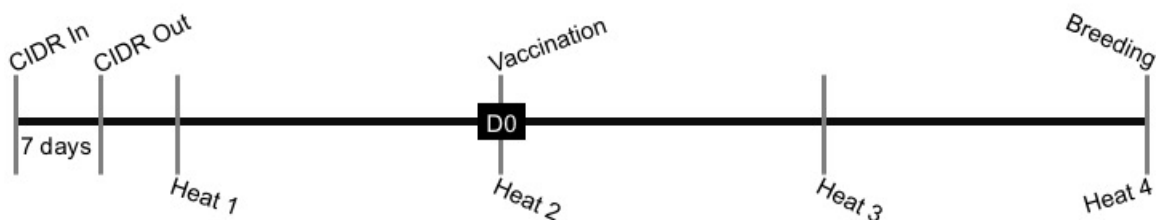
Percent of Operations by Type of Vaccine Given		
	Heifers	Cows
Type of Vaccine	Percent	Percent
Killed	43.1	56.3
Modified Live	62.2	48.9

Up until 2004, most avoided BRDC MLV administration in pregnant animals with previous issues linking these vaccines with abortion. However, there were labeling changes in 2004, which indicated new BRDC MLVs that were safe for use in pregnant animals when a strict pre-vaccination protocol was followed. Likely, the trend in vaccinations seen in the 2007 study

between MLV and KV use in heifers versus cows was a result of latent fear of using an MLV in a pregnant animal, as cows most often receive annual boosters during pregnancy. Still today, there are continuing concerns regarding BRDC MLV and the reproductive health of animals on the dairy farm. The main focus for continued issues in reproductive health associated with BRDC MLV comes from the IBR component.

Both the IBR virus itself and the IBR MLV have a longstanding history as causing inflammation of the ovary resulting in abnormal cyclicity of cattle. This abnormal cyclicity is most often the result of impaired follicle growth and improper corpus luteum (CL) development. With regards to breeding age heifers, vaccination on top of breeding has shown delayed and altered luteinization (CL formation) during the first week post estrus (Spire et al., 1996). Though not well studied, there may be implications for the long-term development of follicles as well. In a study of 59 synchronized beef heifers, 38% of the MLV vaccinated heifers experienced an abnormal estrous cycle following vaccination. Although these heifers returned to normal, at the conclusion of the breeding season they still experienced a significantly lower pregnancy rate (48% versus 90% in unvaccinated heifers), indicating that there may have been damage or alterations to the follicular pool (Perry et al., 2013).

For the trial conducted at UGA, the research team examined changes in the ovary, first service conception rates, estrogen and progesterone concentrations as well as Anti-Müllerian Hormone (AMH). Historically AMH has been best characterized as a predictor for super ovulation response (Ireland et al., 2008; Rico et al., 2009). Thus, changes in the circulating concentrations of AMH may be indicative of a reduction in the viability of the follicular pool or follicles available for ovulation in future cycles. For this trial, all heifers were calthood vaccinated with a BRDC vaccine containing a MVL component. They were then revaccinated approximately 42 days prior to first breeding with either the same BRDC MLV or with a BRDC KV. The team also evaluated the amount of immune response elicited by these two vaccine types. The basic timeline for the experiment is outlined below in Figure 1.



**Figure 1:** *Experimental timeline.*

Overall, heifers exhibited no differences in reproduction with most having normal estrous cycles and similar hormone profiles regardless of the type of vaccine they received. There was the observation of some abnormal CL development in the MLV heifers, with many exhibiting large cavities or lumens, but this did not impact progesterone production or their estrous cycle. There was a slight decline in AMH levels in the MLV group following vaccination. These AMH levels did not rebound to prevaccination levels by the conclusion of the trial (approximately 42 day post vaccination). This indicates the potential for long-term damage to growing follicles associated with the MLV. The anticipated duration of this damage would be approximately 60 days based on follicular development rates. Though it is important to again mention that this decrease in AMH levels did not impact success at first breeding. The average first service conception risk for heifers (bred approximately 42 days after vaccination) regardless of vaccine type was 55% using the



program outlined in Table 2. This program was conducted in an effort to maximize consistency and efficiency for breeding of all animals.

**Table 2: *Breeding Guidelines for Research Heifers***

Time Observed Standing	Approximate Time to Breed
6:00 AM (suspect overnight standing)	9:30 AM
6:00 AM – 2:00 PM	6:00 PM
2:00 PM – 6:00 PM	7:00 AM Next Day

Anticipated outcomes were observed in the immune response of the two vaccines. Heifers vaccinated with KV had a more rapid onset of immune system response, likely caused by the adjuvant when compared to MLV heifers. The MLV vaccinated heifers, on the other hand, exhibited a delayed response to vaccination as the MLV components of the vaccine needed time to replicate and expand within the host to induce a response in the immune system. The major difference was seen in immune system response with regards to the vaccination of sick animals. Unfortunately, one group of animals used in the trial contracted a pathogen inducing severe scours and elevated temperatures approximately one week after vaccination. Within this group, there was an obvious exhaustion of the immune system and damage to typical immune system responder cells. This group also contributed to the reduction in overall first service conception risk for the virgin heifers. There was no difference in titer levels three weeks following vaccination with the MLV or KV.

Takeaways:

- If planning to use a MLV pre-breeding, use that same vaccine in your calfhood vaccination program.
- Based on this trial and others, try to complete pre-breeding vaccinations at least 45-60 days prior to first breeding. This will reduce any potential reproductive complications and will allow time for effective coverage by the vaccine.
- Vaccination of sick animals reduces the quality of your immune response. Most effective vaccine coverage will be achieved when animals are allowed to recover from an illness before being challenged with a vaccination.

Please feel free to contact the authors for more information on the vaccines used, additional data, and explanation of data, tables, figures, or any other resource that may be of use to you.

## **June dairy month**

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June is Dairy Month. It is an unusual holiday event since it is a month long. The program was started in 1937. When it started it was called “National Dairy Month” and ran from June 10 to July 10. It was sponsored by chain stores to the theme of “Keep Youthful – Drink Milk”. The National Dairy Council (NDC) supported the idea to help increase demand as production rose in many areas where cows went on pasture in the late spring and school ended. The NDC supplied promotional material to 6,300 stores that participated in the first program.

In 1939, “June Dairy Month” became the official title and the focus was on the increased use of dairy products. The effort was funded with a 1 cent per pound of butterfat check off in June. How times have changed with the cost of the checkoff.

During the war years, the focus was on usage and how to obtain an adequate supply of dairy products due to rationing. After the war, efforts returned to increasing sale and regaining the lost butter sales.

In 1955, the American dairy Association (ADA) took over control of the June Dairy Month program. The emphasis was changed to sales promotion for dairy products and became a year around program with promotions for different dairy products.

June Dairy Month also evolved into a celebration of the dairy industry. Many communities have developed festivals, parades, cattle shows, princess contests for June Dairy Month with sponsorship of local business and distribution of dairy products. Even though it is still designed to increase sales of dairy products, June Dairy Month is also a celebration of our dairy industry.

# Important Dates

## 2016 - 2017

### **Jr. Commercial dairy heifer showmanship and Show**

- Oct 9, 2016
- Georgia National Fair, Perry, GA

### **Open and Junior Open Dairy Show**

- Oct 14-16, 2016
- Georgia National Fair, Perry, GA

### **2016 Sunbelt Expo**

- Oct 18-20, 2016
- Moultrie, GA

### **54<sup>th</sup> Annual UGA Spring Dairy Show**

- March 25<sup>th</sup>, 2017
- Athens, GA – ADS Instructional Arena
- Show begins at 9:00 AM – come out and enjoy looking at good cattle while visiting with friends in the dairy industry!

Top GA DHIA By Test Day Milk Production – March 2016									
				Test Day Average			Yearly Average		
<u>Herd</u>	<u>County</u>	<u>Br.</u>	<u><sup>1</sup>Cows</u>	<u>% Days in Milk</u>	<u>TD Milk</u>	<u>% Fat</u>	<u>TD Fat</u>	<u>Milk</u>	<u>Lbs. Fat</u>
RODGERS' HILLCREST FARMS INC.*	McDuffie	H	458	87	97.3	3.4	2.8	30763	1065
DAVE CLARK*	Morgan	H	1137	88	93.6	3.6	2.92	29275	1044
EBERLY FAMILY FARM*	Burke	H	779	86	91.6	3.5	2.91	26707	984
A & J DAIRY*	Wilkes	H	432	91	91.5			28688	
B&S DAIRY*	Wilcox	H	715	88	88.7	3.5	2.77	24968	888
R & D DAIRY*	Laurens	H	346	91	88.5	3.8	2.95	26165	1007
SCOTT GLOVER*	White	H	218	91	86.4	3.8	2.69	26805	962
J.EVERETT WILLIAMS*	Morgan	X	1828	88	84.9	3.8	2.89	27037	1068
IRVIN R YODER	Macon	H	193	92	83.4	3.4	2.67	25427	911
MARTY SMITH DAIRY*	Wilkes	H	318	87	82	3.8	2.86	25185	870
PHIL HARVEY #2*	Putnam	H	1246	90	81.1	3.4	2.51	26646	848
DOUG CHAMBERS	Jones	H	449	89	80.7	3.2	2.37	25755	867
COASTAL PLAIN EXP STATION*	Tift	H	289	89	80.7	4.2	3.1	24514	890
DANNY BELL*	Morgan	H	272	90	80.6	3.9	2.71	26362	1009
MARTIN DAIRY L. L. P.	Hart	H	324	91	80.4	3.7	2.84	24006	870
RAY WARD DAIRY	Putnam	H	143	88	80.3	3.8	3.02	23535	887
LEE WHITAKER	McDuffie	H	268	87	80.1	3.5	2.63	20682	757
LARRY MOODY	Ware	H	1024	87	79.8			22889	
HICKORY HEAD DAIRY*	Brooks	H	2304	87	79.7	3.5	2.44	21616	726
TROY YODER	Macon	H	222	88	79.5	4.2	2.93	23889	931

<sup>1</sup>Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. (Mo.) column indicates month of 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 – March 2016									
				<u>Test Day Average</u>			<u>Yearly Average</u>		
<u>Herd</u>	<u>County</u>	<u>Br.</u>	<sup>1</sup> <u>Cows</u>	<u>% Days in Milk</u>	<u>TD Milk</u>	<u>% Fat</u>	<u>TD Fat</u>	<u>Milk</u>	<u>Lbs. Fat</u>
COASTAL PLAIN EXP STATION*	Tift	H	289	89	80.7	4.2	3.1	24514	890
RAY WARD DAIRY	Putnam	H	143	88	80.3	3.8	3.02	23535	887
R & D DAIRY*	Laurens	H	346	91	88.5	3.8	2.95	26165	1007
TROY YODER	Macon	H	222	88	79.5	4.2	2.93	23889	931
DAVE CLARK*	Morgan	H	1137	88	93.6	3.6	2.92	29275	1044
EBERLY FAMILY FARM*	Burke	H	779	86	91.6	3.5	2.91	26707	984
VISTA FARM	Jefferson	H	99	92	76.2	3.8	2.9	23925	903
J.EVERETT WILLIAMS*	Morgan	X	1828	88	84.9	3.8	2.89	27037	1068
MARTY SMITH DAIRY*	Wilkes	H	318	87	82	3.8	2.86	25185	870
MARTIN DAIRY L. L. P.	Hart	H	324	91	80.4	3.7	2.84	24006	870
RODGERS' HILLCREST FARMS INC.*	McDuffie	H	458	87	97.3	3.4	2.8	30763	1065
B&S DAIRY*	Wilcox	H	715	88	88.7	3.5	2.77	24968	888
DANNY BELL*	Morgan	H	272	90	80.6	3.9	2.71	26362	1009
AMERICAN DAIRYCO-GEORGIA,LLC.*	Mitchell	H	3774	88	77	3.8	2.7	23457	887
SCOTT GLOVER*	White	H	218	91	86.4	3.8	2.69	26805	962
WILLIAMS DAIRY	Taliaferro	H	145	91	76.3	3.8	2.69	23907	854
IRVIN R YODER	Macon	H	193	92	83.4	3.4	2.67	25427	911
OCMULGEE DAIRY	Houston	H	318	88	78.3	3.8	2.65	22462	817
LEE WHITAKER	McDuffie	H	268	87	80.1	3.5	2.63	20682	757
EARNEST R TURK	Putnam	H	361	93	73.8	3.7	2.62	21330	817

<sup>1</sup>Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. (Mo.) column indicates month of 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 – April 2016										
					Test Day Average			Yearly Average		
<u>Herd</u>	<u>County</u>	<u>Br.</u>	<u>Test date</u>	<sup>1</sup> <u>Cows</u>	<u>% Days in Milk</u>	<u>TD Milk</u>	<u>% Fat</u>	<u>TD Fat</u>	<u>Milk</u>	<u>Lbs. Fat</u>
RODGERS' HILLCREST FARMS INC.*	McDuffie	H	4/20/2016	446	87	104.5	3.3	3.07	30716	1061
DAVE CLARK*	Morgan	H	3/28/2016	1139	88	97.1	3.5	3.03	29337	1045
EBERLY FAMILY FARM*	Burke	H	3/28/2016	779	86	91.6	3.5	2.91	26707	984
B&S DAIRY*	Wilcox	H	4/26/2016	714	87	90.4	3.5	2.69	25057	889
A & J DAIRY*	Wilkes	H	4/18/2016	430	91	90.2			28570	
SCOTT GLOVER*	White	H	3/29/2016	216	89	88.2	3	2.18	26596	956
R & D DAIRY*	Laurens	H	3/31/2016	364	91	87.6	3.6	2.96	26438	1018
MARTY SMITH DAIRY*	Wilkes	H	4/7/2016	318	88	87.3	3.4	2.74	25158	886
J.EVERETT WILLIAMS*	Morgan	X	4/4/2016	1835	88	87.1	3.8	2.89	27020	1064
PHIL HARVEY #2*	Putnam	H	4/22/2016	1248	90	84.3	4	3.05	26615	868
IRVIN R YODER	Macon	H	3/26/2016	193	92	83.4	3.4	2.67	25427	911
BILL DODSON	Putnam	H	4/25/2016	236	89	83.1	3.2	2.56	22696	794
COASTAL PLAIN EXP STATION*	Tift	H	4/15/2016	282	89	82.9	3.4	2.54	24585	900
DOUG CHAMBERS	Jones	H	4/27/2016	430	89	81.2	3.3	2.39	25811	861
MARTIN DAIRY L. L. P.	Hart	H	3/30/2016	325	91	81.2	3.7	2.94	23960	874
DANNY BELL*	Morgan	H	3/31/2016	276	90	80.7	3.9	2.81	26207	1006
RAY WARD DAIRY	Putnam	H	4/18/2016	137	88	80.2	3.2	2.54	23512	878
LEE WHITAKER	McDuffie	H	3/8/2016	268	87	80.1	3.5	2.63	20682	757
AMERICAN DAIRYCO-GEORGIA,LLC.*	Mitchell	H	4/6/2016	3725	88	78.4	3.6	2.62	23619	891
CHAD DAVIS	Putnam	H	3/30/2016	313	90	77.3	3.2	2.37	22396	767

<sup>1</sup>Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. (Mo.) column indicates month of 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 - April 2016**

<u>Herd</u>	<u>County</u>	<u>Br.</u>	<u>Test Date</u>	<u><sup>1</sup>Cows</u>	<u>Test Day Average</u>				<u>Yearly Average</u>	
					<u>% Days in Milk</u>	<u>TD Milk</u>	<u>% Fat</u>	<u>TD Fat</u>	<u>Milk</u>	<u>Lbs. Fat</u>
RODGERS' HILLCREST FARMS INC.*	McDuffie	H	4/20/2016	446	87	104.5	3.3	3.07	30716	1061
PHIL HARVEY #2*	Putnam	H	4/22/2016	1248	90	84.3	4	3.05	26615	868
DAVE CLARK*	Morgan	H	3/28/2016	1139	88	97.1	3.5	3.03	29337	1045
R & D DAIRY*	Laurens	H	3/31/2016	364	91	87.6	3.6	2.96	26438	1018
MARTIN DAIRY L. L. P.	Hart	H	3/30/2016	325	91	81.2	3.7	2.94	23960	874
EBERLY FAMILY FARM*	Burke	H	3/28/2016	779	86	91.6	3.5	2.91	26707	984
J.EVERETT WILLIAMS*	Morgan	X	4/4/2016	1835	88	87.1	3.8	2.89	27020	1064
DANNY BELL*	Morgan	H	3/31/2016	276	90	80.7	3.9	2.81	26207	1006
VISTA FARM	Jefferson	H	4/15/2016	99	92	71.2	3.9	2.78	23804	905
MARTY SMITH DAIRY*	Wilkes	H	4/7/2016	318	88	87.3	3.4	2.74	25158	886
B&S DAIRY*	Wilcox	H	4/26/2016	714	87	90.4	3.5	2.69	25057	889
WILLIAMS DAIRY	Taliaferro	H	3/21/2016	145	91	76.3	3.8	2.69	23907	854
IRVIN R YODER	Macon	H	3/26/2016	193	92	83.4	3.4	2.67	25427	911
LEE WHITAKER	McDuffie	H	3/8/2016	268	87	80.1	3.5	2.63	20682	757
AMERICAN DAIRYCO-GEORGIA,LLC.*	Mitchell	H	4/6/2016	3725	88	78.4	3.6	2.62	23619	891
TROY YODER	Macon	H	3/31/2016	229	89	77.1	4	2.59	24206	946
BILL DODSON	Putnam	H	4/25/2016	236	89	83.1	3.2	2.56	22696	794
CHARLES STEWART	Greene	X	4/12/2016	116	88	73.1	3.7	2.56	19831	718
COASTAL PLAIN EXP STATION*	Tift	H	4/15/2016	282	89	82.9	3.4	2.54	24585	900
RAY WARD DAIRY	Putnam	H	4/18/2016	137	88	80.2	3.2	2.54	23512	878

<sup>1</sup>Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. (Mo.) column indicates month of 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 – May 2016**

<u>Herd</u>	<u>County</u>	<u>Br.</u>	<u>Test Date</u>	<u><sup>1</sup>Cows</u>	<u>Test Day Average</u>			<u>Yearly Average</u>		
					<u>% Days in Milk</u>	<u>TD Milk</u>	<u>% Fat</u>	<u>TD Fat</u>	<u>Milk</u>	<u>Lbs. Fat</u>
RODGERS' HILLCREST FARMS INC.*	McDuffie	H	5/24/2016	440	88	105.7	3.5	3.35	30846	1066
DAVE CLARK*	Morgan	H	5/2/2016	1126	88	94.2	3.5	2.97	29399	1048
EBERLY FAMILY FARM*	Burke	H	4/28/2016	774	86	92.5	3.3	2.65	27117	990
B&S DAIRY*	Wilcox	H	5/26/2016	756	87	90.4	3.4	2.65	25248	891
SCOTT GLOVER	White	H	4/27/2016	206	89	88.8	3.8	2.95	26606	972
R & D DAIRY*	Laurens	H	5/3/2016	370	91	87.5	3.5	2.85	26658	1022
MARTY SMITH DAIRY*	Wilkes	H	4/7/2016	318	88	87.3	3.4	2.74	25158	886
J.EVERETT WILLIAMS*	Morgan	X	5/9/2016	1886	88	85.9	4.1	3.04	26955	1059
A & J DAIRY*	Wilkes	H	5/27/2016	435	91	85.2			28439	
DANNY BELL*	Morgan	H	5/5/2016	276	90	82.1	3.6	2.58	26121	1004
MARTIN DAIRY L. L. P.	Hart	H	5/2/2016	324	91	81.7	3.3	2.64	24001	880
BILL DODSON	Putnam	H	5/23/2016	237	89	80.9	2.9	2.22	22864	789
COASTAL PLAIN EXP STATION*	Tift	H	5/21/2016	280	89	80.2	3.4	2.36	24595	901
TROY YODER	Macon	H	4/29/2016	239	89	78.3	3.9	2.59	24387	952
DOUG CHAMBERS	Jones	H	5/25/2016	430	89	78	3.3	2.29	25744	855
IRVIN R YODER	Macon	H	4/30/2016	203	92	77.6	3.4	2.51	25675	913
PHIL HARVEY #2*	Putnam	H	5/19/2016	1262	90	77	3.8	2.7	26536	886
CHAD DAVIS	Putnam	H	5/11/2016	313	91	77	3.2	2.23	22613	768
RUFUS YODER JR	Macon	H	4/21/2016	136	89	76.9	3.2	2.38	21846	770
LARRY MOODY	Ware	H	5/28/2016	1027	88	75.8	3.5	3.35	23537	1066

<sup>1</sup>Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. (Mo.) column indicates month of 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 – May 2016										
					<u>Test Day Average</u>				<u>Yearly Average</u>	
<u>Herd</u>	<u>County</u>	<u>Br.</u>	<u>Test Date</u>	<u><sup>1</sup>Cows</u>	<u>% DIM</u>	<u>TD Milk</u>	<u>% Fat</u>	<u>TD Fat</u>	<u>Milk</u>	<u>Lbs. Fat</u>
RODGERS' HILLCREST FARMS INC.*	McDuffie	H	5/24/2016	440	88	105.7	3.5	3.35	30846	1066
J.EVERETT WILLIAMS*	Morgan	X	5/9/2016	1886	88	85.9	4.1	3.04	26955	1059
DAVE CLARK*	Morgan	H	5/2/2016	1126	88	94.2	3.5	2.97	29399	1048
SCOTT GLOVER	White	H	4/27/2016	206	89	88.8	3.8	2.95	26606	972
R & D DAIRY*	Laurens	H	5/3/2016	370	91	87.5	3.5	2.85	26658	1022
MARTY SMITH DAIRY*	Wilkes	H	4/7/2016	318	88	87.3	3.4	2.74	25158	886
PHIL HARVEY #2*	Putnam	H	5/19/2016	1262	90	77	3.8	2.7	26536	886
VISTA FARM	Jefferson	H	5/18/2016	99	92	70.4	3.8	2.68	23680	903
EBERLY FAMILY FARM*	Burke	H	4/28/2016	774	86	92.5	3.3	2.65	27117	990
B&S DAIRY*	Wilcox	H	5/26/2016	756	87	90.4	3.4	2.65	25248	891
MARTIN DAIRY L. L. P.	Hart	H	5/2/2016	324	91	81.7	3.3	2.64	24001	880
TROY YODER	Macon	H	4/29/2016	239	89	78.3	3.9	2.59	24387	952
DANNY BELL*	Morgan	H	5/5/2016	276	90	82.1	3.6	2.58	26121	1004
AMERICAN DAIRYCO-GEORGIA,LLC.*	Mitchell	H	5/4/2016	3750	88	75.7	3.7	2.56	23760	894
IRVIN R YODER	Macon	H	4/30/2016	203	92	77.6	3.4	2.51	25675	913
TWIN OAKS FARM	Jeff Davis/Jefferson	H	5/17/2016	97	89	67.7	3.7	2.48	19382	715
RAY WARD DAIRY	Putnam	H	5/16/2016	136	88	73.6	3.4	2.44	23542	872
HORST CREST FARMS	Burke/Butts	H	5/26/2016	184	87	68.1	3.9	2.39	21694	824
RUFUS YODER JR	Macon	H	4/21/2016	136	89	76.9	3.2	2.38	21846	770
COASTAL PLAIN EXP STATION*	Tift	H	5/21/2016	280	89	80.2	3.4	2.36	24595	901

<sup>1</sup>Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. (Mo.) column indicates month of 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 - March 2016									
<u>Herd</u>	<u>County</u>	<u>Test Date</u>	<u>Br.</u>	<u>Cows</u>	<u>Milk-Rolling</u>	<u>SCC-TD-Average Score</u>	<u>SCC-TD-Weight Average</u>	<u>SCC- Average Score</u>	<u>SCC-Wt.</u>
BERRY COLLEGE DAIRY	Floyd	3/24/2016	J	34	16420	1.1	34	1.7	76
J.EVERETT WILLIAMS*	Morgan	3/7/2016	X	1828	27037	1.3	82	1.6	117
VISTA FARM	Jefferson	3/11/2016	H	99	23925	1.7	155	2.1	193
BILL DODSON	Putnam	3/19/2016	H	230	22546	1.8	144	2	163
SCOTT GLOVER*	White	2/25/2016	H	218	26805	1.8	97	2	115
LEE WHITAKER	McDuffie	3/8/2016	H	268	20682	1.9	153	2.3	205
DAVID ADDIS	Whitfield/Wilcox	2/28/2016	H	39	20435	2	227	1.4	96
DAVE CLARK*	Morgan	2/29/2016	H	1137	29275	2	172	1.9	146
ALEX MILLICAN	Walker	3/6/2016	H	90		2.2	234	2.4	213
BRENNEMAN FARMS	McIntosh/Macon	2/29/2016	H	126	18984	2.2	267	2.7	404
JEFF WOOTEN*JEFF	Putnam	3/1/2016	H	258	17070	2.3	278	2.7	278
LOUIS YODER	Macon	3/10/2016	H	136	20981	2.3	170	3	360
RUFUS YODER JR	Macon	3/11/2016	H	140	21414	2.3	164	2.7	300
COASTAL PLAIN EXP STATION*	Tift	3/18/2016	H	289	24514	2.3	157	2.3	195
IRVIN R YODER	Macon	3/26/2016	H	193	25427	2.3	164	2.4	183
DANNY BELL*	Morgan	3/3/2016	H	272	26362	2.3	190	1.8	138
PHIL HARVEY #2*	Putnam	3/21/2016	H	1246	26646	2.3	189	2.2	204
EARNEST R TURK	Putnam	3/23/2016	H	361	21330	2.4	191	2.9	253
R & D DAIRY*	Laurens	2/22/2016	H	346	26165	2.4	274	2.3	236
RODGERS' HILLCREST FARMS INC.*	McDuffie	3/18/2016	H	458	30763	2.4	199	2.4	209

<sup>1</sup>Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. (Mo.) column indicates month of 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 – April 2016									
<u>Herd</u>	<u>County</u>	<u>Test Date</u>	<u>Br.</u>	<u>Cows</u>	<u>Milk-Rolling</u>	<u>SCC-TD-Average Score</u>	<u>SCC-TD-Weight Average</u>	<u>SCC- Average Score</u>	<u>SCC-Wt.</u>
DAVID ADDIS	Whitfield/Wilcox	4/2/2016	H	40	20347	0.7	25	1.4	94
BERRY COLLEGE DAIRY	Floyd	3/24/2016	J	34	16420	1.1	34	1.7	76
J.EVERETT WILLIAMS*	Morgan	4/4/2016	X	1835	27020	1.2	76	1.6	113
BILL DODSON	Putnam	4/25/2016	H	236	22696	1.7	104	2	156
COASTAL PLAIN EXP STATION*	Tift	4/15/2016	H	282	24585	1.7	102	2.3	186
SCOTT GLOVER*	White	3/29/2016	H	216	26596	1.7	148	2.1	118
DAVE CLARK*	Morgan	3/28/2016	H	1139	29337	1.8	130	1.9	144
ALEX MILLICAN	Walker	4/2/2016	H	103		1.9	174	2.3	210
LEE WHITAKER	McDuffie	3/8/2016	H	268	20682	1.9	153	2.3	205
JERRY SWAFFORD	Putnam	4/26/2016	H	195	21507	2	161	2.6	244
RONNIE ROBINSON	Spalding	4/8/2016	H	105	18387	2.1	148	2.3	216
BRENNEMAN FARMS	McIntosh/Macon	4/25/2016	H	132	18798	2.1	273	2.6	385
VISTA FARM	Jefferson	4/15/2016	H	99	23804	2.1	181	2.1	192
DANNY BELL*	Morgan	3/31/2016	H	276	26207	2.1	141	1.8	142
PHIL HARVEY #2*	Putnam	4/22/2016	H	1248	26615	2.1	159	2.3	202
RODGERS' HILLCREST FARMS INC.*	McDuffie	4/20/2016	H	446	30716	2.1	188	2.4	206
JEFF WOOTEN*JEFF	Putnam	4/5/2016	H	257	16930	2.2	200	2.6	267
IRVIN R YODER	Macon	3/26/2016	H	193	25427	2.3	164	2.4	183
RUFUS YODER JR	Macon	4/21/2016	H	136	21846	2.4	183	2.7	296
MARTIN DAIRY L. L. P.	Hart	3/30/2016	H	325	23960	2.4	208	3.1	286
TROY YODER	Macon	3/31/2016	H	229	24206	2.4	162	2.5	171

<sup>1</sup>Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. (Mo.) column indicates month of 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 – May 2016									
<u>Herd</u>	<u>County</u>	<u>Test Date</u>	<u>Br.</u>	<u>Cows</u>	<u>Milk-Rolling</u>	<u>SCC-TD-Average Score</u>	<u>SCC-TD-Weight Average</u>	<u>SCC- Average Score</u>	<u>SCC-Wt.</u>
DAVID ADDIS	Whitfield/Wilcox	5/21/2016	H	38	20006	1.2	90	1.4	99
BERRY COLLEGE DAIRY	Floyd	5/23/2016	J	33	16550	1.3	48	1.5	63
SCOTT GLOVER	White	4/27/2016	H	206	26606	1.3	69	2	112
J.EVERETT WILLIAMS*	Morgan	5/9/2016	X	1886	26955	1.5	96	1.6	112
DANNY BELL*	Morgan	5/5/2016	H	276	26121	1.7	102	1.8	142
COASTAL PLAIN EXP STATION*	Tift	5/21/2016	H	280	24595	1.8	124	2.2	179
DAVE CLARK*	Morgan	5/2/2016	H	1126	29399	1.8	132	1.9	143
BRENNEMAN FARMS	McIntosh/Macon	5/23/2016	H	129	18640	1.9	274	2.5	385
JEFF WOOTEN*JEFF	Putnam	5/3/2016	H	255	16842	2	183	2.5	257
ALEX MILLICAN	Walker	5/1/2016	H	106	19338	2	211	2.3	210
BILL DODSON	Putnam	5/23/2016	H	237	22864	2	165	2	159
TROY YODER	Macon	4/29/2016	H	239	24387	2	136	2.5	164
B&S DAIRY*	Wilcox	5/26/2016	H	756	25248	2	221	2.6	282
RONNIE ROBINSON	Spalding	4/8/2016	H	105	18387	2.1	148	2.3	216
W.T.MERIWETHER	Morgan	5/10/2016	H	79	18588	2.1	183	2.7	246
VISTA FARM	Jefferson	5/18/2016	H	99	23680	2.1	142	2.1	190
WILLIAMS DAIRY	Taliaferro	5/12/2016	H	137	23698	2.1	173	2.5	212
JAMES W MOON	Morgan	5/4/2016	H	127	17047	2.2	143		
JERRY SWAFFORD	Putnam	5/24/2016	H	193	21331	2.2	217	2.4	235
IRVIN R YODER	Macon	4/30/2016	H	203	25675	2.2	142	2.4	171
PHIL HARVEY #2*	Putnam	5/19/2016	H	1262	26536	2.2	154	2.3	194

<sup>1</sup>Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. (Mo.) column indicates month of 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).