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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.

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Sincerely,

Sha Tao

Sha Tao, Assistant Professor

To forestrip or not to forestrip, that should not be the question!

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The act of forestripping can be time-consuming and labor intensive. However, stripping the first 3-5 streams of milk during the milking routine prior to unit attachment serves 3 important purposes; 1) teat stimulation, 2) removes highest bacterial and somatic cell count (SCC) milk, and 3) aids in identify mastitis. So when is the best time to incorporate forestripping? Forestripping should be done on clean teats prior to pre-dipping with a germicidal teat dip. Forestripping can be done immediately prior pre-dipping so the milker doesn't have to leave in between steps. Though pre-dipping can be done before forestripping, it is not advised because even gloved hands may be contaminated with mastitis-causing bacteria. The following 3 sections will briefly discuss the 3 primary advantages of forestripping.

Teat stimulation

Teat stimulation for 10-15 seconds sends nerve impulses to the brain. This leads to release of a hormone, oxytocin, into the blood stream which travels to the udder to initiate milk let-down. There is about a 1-2 minute lag between teat stimulation and milk let-down. Though inadequate teat stimulation does not necessarily decrease total milk yield, milk flow will be reduced, or interrupted, resulting in longer milking times (Bruckmaier and Blum, 1998). Interrupted milk flow happens after the teat and gland cistern milk (Figure 1) has been collected followed by a lag before milk let-down is achieved. Observing bimodal milk flow (Figure 2) indicates interrupted milk flow suggesting insufficient teat stimulation. The first peak in a bimodal curve represents cisternal milk and collection of alveolar milk begins at the second peak. Bimodal milk flow contributes to overmilking and tissue damage. Teat end scoring is one way overmilking can be assessed (Figure 3).

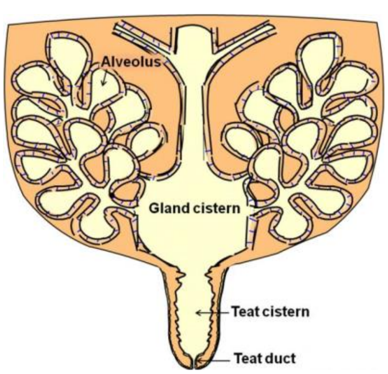


Figure 1. *Anatomy of the udder.*

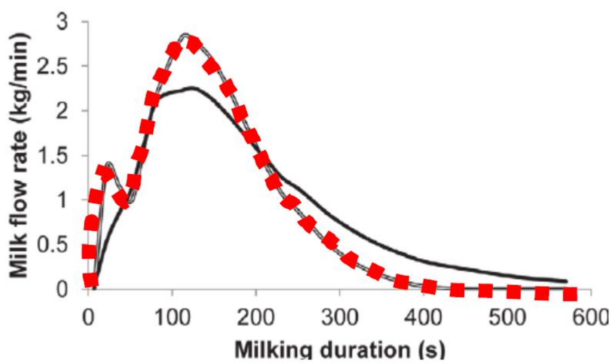


Figure 2. *Milk flow curves from proper milk flow (black line) vs. bimodal flow (red dashed line) (Edwards et al., 2013).*

Various methods can, and have been, used for teat stimulation, such as dry wiping or mechanical brush stimulation. Forestripping, however, best mimics a calf preparing to nurse and serves additional milk quality and mammary health purposes (discussed in the next 2 sections).

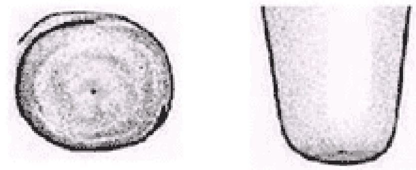
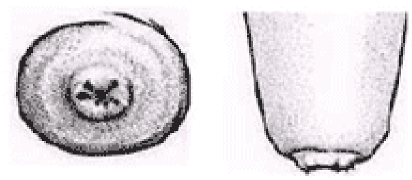
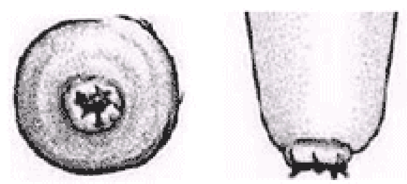
Score	Description	Illustration
Score 1 (N)	**No Ring.** The teat-end is smooth with a small, even orifice. This is a typical status for many teats soon after the start of lactation.	
Score 2 (S)	**Smooth or Slightly Rough Ring.** A raised ring encircles the teat orifice. The surface of the ring is smooth or it may feel slightly rough but no fragments of old keratin are evident.	
Score 3 (R)	**Rough Ring.** A raised, roughened ring with isolated fragments of old keratin extending a short distance from the teat orifice.	
Score 4 (VR)	**Very Rough Ring.** A raised ring with rough fragments of old keratin extending out from the teat orifice. The rim of the ring is rough and may be cracked, often giving the test-end a "flowered" appearance.	
Score 5	**Open Lesions or Scabs.**	*Not pictured.*

Figure 3. *Teat end scoring chart.*

Lastly, it is important to note that environmental factors can affect milk let-down, even with appropriate teat stimulation. The most striking inhibitors of milk let-down are fear and stress. Fear activates the fight-or-flight response resulting in blood being diverted from the udder to the extremities. Lower blood flow to the udder results in reduced oxytocin arriving after teat stimulation. Additionally, adrenaline release during fear or stress directly blocks the action of oxytocin preventing milk-letdown for up to 30 minutes. Avoiding loud noises or shouting, frequent changes in routine, rods/sticks, and rough handling in general will create a calm, stress-free trip to the parlor. The trip to and from the milking parlor should be a peaceful experience to allow the cow to focus on two things, making and giving milk!

Remove highest bacterial and SCC milk

In addition to teat stimulation, stripping foremilk also aids in reducing the highest bacterial and SCC milk in the udder. Even in healthy, non-mastitic animals, hundreds to thousands of somatic cells can be concentrated in this small volume of milk. One study reported an 80%

decrease in SCC from foremilk compared to milk collected after milk let-down (Sarikaya and Bruckmaier, 2006). Importantly, the SCC of foremilk represented 20% of the total SCC of milk. Just think about this scenario, if your cell count is 250,000 cells/mL, removing the foremilk could reduce your overall SCC for that animal to 200,000 cells/mL or below.

When considering cows with subclinical mastitis, high numbers of bacteria can also be present, in addition to high SCC. Some of the first published reports of greater bacterial numbers in the first few streams of milk date back to the 1920s (Sarikaya and Bruckmaier, 2006). Researchers found that SCC of milk from mid-milking was about 90% lower than SCC of foremilk. Although many changes have taken place on our farms and with our cows since the 1920s, one of the main principles of forestripping has not changed: stripping foremilk flushes out highest bacterial and SCC milk. Less bacteria and lower SCC milk are critical pieces to the improved milk quality puzzle.

Identify mastitis

The third primary reason to include forestripping in your milking routine is to identify clinical mastitis and other abnormalities in the teat and udder. While the udder will eventually become red and swollen during many cases of mastitis, generally the earliest physical changes are in milk appearance. Characteristics of mastitic milk include off-color, bloody/blood clots, watery, flakes or clumps, and stringiness. Assessing foremilk for signs of mastitis will prevent delayed antibiotic treatment, allow for quicker culture for mastitis-causing pathogens, or enable more rapid management decisions. Further, a delay in identifying mastitis results in unforeseen losses in milk production due to the infection. In the interest of timely treatment, forestripping is a more effective method for identifying clinical mastitis than observation of the udder for abnormalities.

Newer technologies that allow for on-line assessment of milk can be useful in conjunction with visual assessment. As a result of the breakdown in the blood-milk barrier, mastitis results in increased ions in milk, such as sodium, which changes its electrical conductivity (EC). The change in EC occurs in the very early stages of mastitis, even before increased SCC or changes in milk appearance. If EC data is monitored and managed well, and the producer understands the dynamics and EC thresholds of his or her own herd, EC can be a valuable tool in early detection of mastitis (Norberd, 2005). Current recommendations suggest using milk EC changes as a screening tool to determine which animals need further evaluation.

I'll leave you with a few final notes that are important for delivery of clear and correct information. When collecting samples for culture, the milk sample is collected after forestripping and pre-dipping/wiping, but just before the milk unit is attached (the teat end is cleaned again with 70% alcohol prior to sample collection). This is to a) ensure the sample is not contaminated by other existing non-pathogenic bacteria, b) accurately determine numbers of infecting bacteria in the udder if necessary, and c) document correct SCC. Secondly, even when SCC is considered acceptable and especially when lower SCC won't bring in additional premiums, milk loss may still be occurring (Figure 4). Consider all strategies to continue lowering SCC, improving animal and mammary health, and striving for excellent milk quality during the challenges ahead.

SCC (cells/ml)	Estimated milk loss (lb./year)*	% milk loss
100,000	400	3
300,000	1,000	7
500,000	1,300	9
600,000	1,400	10
800,000	1,600	11
1 million	1,700	12
>1.6 million	>1,700	>12

*based on 14 – 15,000 lb milk/cow/year photo: (Philpot and Nickerson, 1991)

Figure 4. *Milk loss associated with SCC.*

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UGA extension

Use of selective dry cow therapy to manage mastitis in bred heifers

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Summary

Presence of mastitis in bred dairy heifers can adversely affect the development of milk-producing tissues, leading to less than maximal milk production and increased SCC during their first lactation. Blanket dry cow therapy using intramammary infusion products has been beneficial in curing infections and preventing new ones from developing. This practice involves treating all 4 quarters of each animal (blanket therapy); however, to minimize drug use, we are investigating selectively treating only the infected quarters of each heifer. Instead of culturing quarter mammary secretions to identify infected glands, which is impractical and costly to the average dairy producer, we are attempting to identify infected quarters based on the physical characteristics of the mammary secretions. Results to date indicate that we are successful in identifying uninfected quarters that do not require treatment about 95% of the time, and in identifying infected quarters that do require treatment about 70% of the time. Treatment is 100% successful in curing quarters infected with *Staphylococcus aureus*, the coagulase-negative staphylococci (CNS), and the environmental streptococci, and this ensures that heifers calve free of mastitis with low SCC, and do not spread contagious bacteria to the milking herd.

Mastitis is present in the future milking herd: Your replacement heifers

Bred heifers represent the future milking stock in all dairy operations, and it is critical that udder health be maximized to ensure that these young animals freshen free of mastitis. During a heifer's first gestation, udder infections compromise the development of milk-producing tissues. In the case of *Staph. aureus* mastitis, milk yield may be reduced 10% over the first lactation, and milk quality is lowered due to an increase in the SCC. In addition, infected heifers introduce staph to the milking herd and spread this contagious pathogen among the adult cows, increasing the bulk tank SCC. In the worst case scenario, mammary tissue infected with staph is replaced with scar tissue, causing the heifer to calve with a blind quarter, ultimately making her a prime candidate for culling.

Research has shown that greater than 90% of breeding age and bred heifers can have mastitis caused by *Staph. aureus*, environmental streps, and CNS. The prevalence of *Staph. aureus* can range from 30 to 80% in some herds, and has been shown to be spread by horn flies. So, an udder health care program should be in place for these future milk producers to eliminate existing cases of mastitis and to prevent new ones from occurring so that heifers calve free of mastitis with low SCC and maximum yield.

Blanket dry cow therapy is successful, but selective therapy may be more efficient

Blanket use of dry cow antibiotic infusion products during mid to late gestation in heifers has been successful in curing existing infections that develop in the immature mammary gland, as well as in preventing new infections that occur close to calving. This practice involves treating all 4 quarters of each animal (blanket therapy) and is considered off-label, requiring a veterinary prescription. It is, however, nearly 100% effective in curing infected quarters and reducing SCC at calving. But, to minimize drug use, we are investigating selectively treating only the infected quarters of each heifer. By minimizing drug use, the chances for antibiotic residues are also reduced as well as the possibility of drugs entering the human food chain.

Instead of culturing quarter mammary secretions to identify infected glands, which is impractical and costly to the average dairy producer, we are attempting to identify infected quarters based on mammary secretion characteristics. For example, secretions that have the appearance and viscosity of honey are usually uninfected while those that are less viscous and appear clear and watery like whey, skim milk, or milk, with or without clots and flakes are usually infected with either *Staph. aureus*, CNS, or environmental streps.

If no secretion can be obtained from one quarter of an animal, but secretions can be obtained from her other quarters, then the one quarter is most likely blind. Treatment of blind quarters may be attempted, but in our experience, the majority are impenetrable by the infusion cannula. Figure 1 illustrates secretion characteristics (honey-like) of uninfected quarters as they appear in test tubes. Figure 2 shows secretions obtained from infected quarters (clear to opaque watery fluid); note the right front (RF) quarter has no secretions and was classified as nonfunctional or blind.

Evaluation of selective dry cow therapy

To evaluate the success of selective therapy in curing existing infections, quarter secretions of 23 heifers were obtained 30-60 days prepartum by expressing 2-3 ml of fluid into test tubes, and classifying quarters as potentially uninfected or infected based on the secretion characteristics listed above. By 60 days before calving, there should be a sufficient volume of secretion accumulated in each quarter to express a few ml. Quarters believed to be infected were then infused with a 10-cc tube of Spectramast DC using sanitary techniques, and quarters believed to be uninfected were left untreated. Then, secretions were processed for bacteriological analysis and SCC to ascertain the true infection status of each quarter.

When heifers calved 1-2 months later, milk samples were collected from each quarter to determine its infection status and SCC in order to assess our success rate of correctly identifying infected vs. uninfected quarters as well as to determine cure rates against the specific mastitis pathogens.

Uninfected quarters are easy to identify

Results to date based on 23 heifers that have calved demonstrated that 95% of the time, uninfected quarters were correctly identified and left untreated, and 70% of the time, infected quarters were correctly identified and treated with antibiotics. Thus, there is far less error in correctly identifying uninfected quarters. Infected quarters that were treated showed a 100% cure rate against *Staph. aureus,* CNS, and the environmental streps.

This study will continue until there are a total of 50 heifers treated, which will allow for a valid statistical analysis. As far a practical application, a dairy producer can be trained to accurately identify an uninfected quarter based on secretion characteristics, but if there is any question as to a quarter's infection status, then it is best to selectively treat that quarter because at least 70% of the time, the quarter is likely to be infected and cure rate is very high (100%).

So, if first-calf heifers in a herd are freshening with elevated SCC or if mastitis is diagnosed at this time, dairymen should develop an udder health program in conjunction with their herd veterinarian to selectively administer dry cow therapy to bred animals during gestation, but no later than 30 days precalving to prevent residues. Always be sure to check for drug residues before milk from a treated animal is added to the bulk tank. Bred heifers are the herd's future milk producers. This age group must not be ignored where udder health is concerned. A heifer with *Staph. aureus* mastitis will yield up to 10% less milk than an uninfected herd mate over her first lactation; that's the difference between a 19,800-pound and a 22,000-pound producer!

Figure 1. *Secretions from 4 quarters of a heifer, all of which were characterized as honey-like, and presumptively diagnosed as uninfected, which upon culture were negative for bacterial growth.*

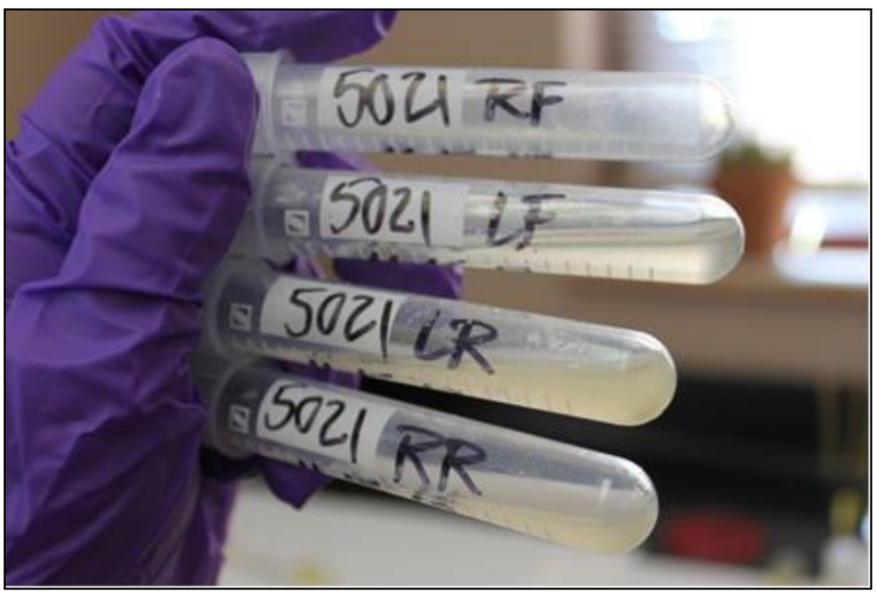

Figure 2. *Secretions from 3 quarters of a heifer, all of which were characterized as clear, opaque, and watery, and presumptively diagnosed as infected, which upon culture were positive for CNS. The RF (right front) has no secretion as was diagnosed as blind.*

UGA extension

Updates on trace minerals for use in cattle: a research-based summary

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The cattle production system has several important component areas, and nutrition plays a crucial role to determine its productivity and profitability. Minerals and more specifically trace minerals are one essential piece to achieve successful outcomes in the bovine production. The effects that minerals and particularly trace minerals have on animal performance and health have been widely studied for decades, but results are variable and dependent on the mineral status and duration of mineral deficiency of the animals (Figure. 1). There is a massive emergence of new studies evaluating the use of trace minerals strategically to reduce the detrimental effects of stress (Richeson and Kigley, 2001; Roberts et al., 2015) and to enhance immune responses to vaccinations in cattle (Arthington and Havenga, 2012; Palomares et al., 2016a and b; Bittar et al., 2017). Within the ten trace minerals required for cattle, researchers have determined the minimum requirements for seven of them (NRC, 1996) – cobalt (Co), copper (Cu), iodine (I), iron (Fe), manganese (Mn), selenium (Se) and zinc (Zn). Even though there is no reliable information regarding dietary requirements of the other three trace minerals (chromium [Cr], molybdenum [Mo] and nickel [Ni]), they are important in cattle nutrition, especially in the case of molybdenum because of the negative effects it exerts on cattle when excess amount is fed. It can bind to other minerals like Cu making them unavailable to the cattle (Suttle, 1991).

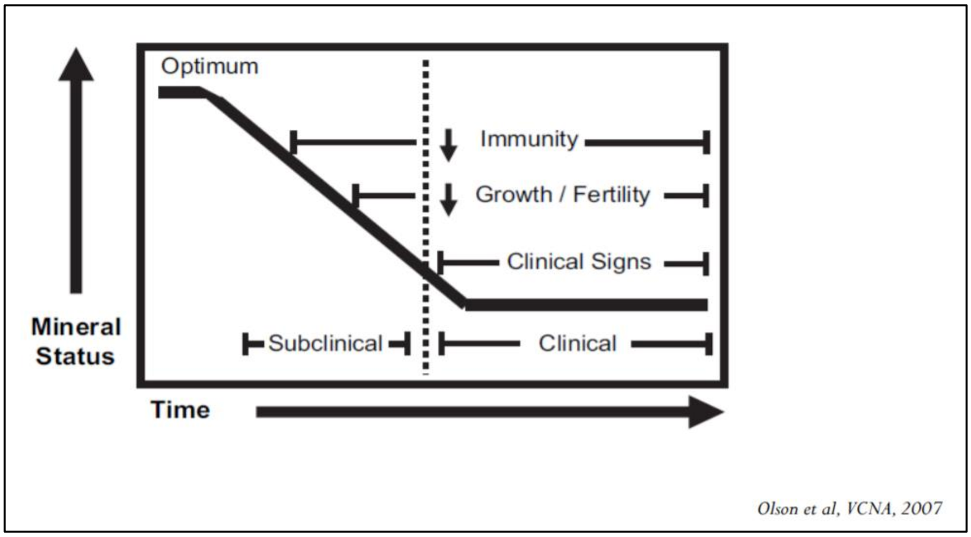

Figure 1. *The effects of trace mineral deficiency on the health and performance of cows and calves. Adapted from Wikse, 1992.*

With exceptions of some regions with an excess of trace minerals in the soil, grass, and water that can lead to toxicity, the most common problem related to trace minerals are their deficiencies in cattle, what can have a negative impact on cattle health and production. The trace minerals most likely to be deficient in grazing cattle diets in the state of Georgia are copper, selenium, and zinc (Stewart, 2017), and therefore there are increased research and efforts to provide more efficient ways to supplement cattle with trace minerals to suffice adequate levels. Trace minerals are involved in several functions of cattle physiology including growth (Spears and Kegley, 2002), participation in several enzymes structure, replication of nucleic acids, and a dramatic role in the immune system in general.

Copper is important in the mitochondrial energy production and plays an important role in neutralizing reactive oxygen species (ROS) by participating in the dismutase superoxidase activity. The phagocyte killing activity and neutrophils and monocytes functions are dependable in copper too, which, therefore, is of high importance in the innate immune response of cattle (Linder, 1991). With regard to the adaptive arm of the immune system, the defective antibody production and the lowered cell-mediated immunity can be associated with copper deficiency in mice (Sherman, 1992). Calves supplemented with injectable trace minerals have improved antibody production and leukocyte proliferation (Arthington and Havenga, 2012; Palomares et al., 2016a and b; Bittar et al., 2017).

Selenium deficiency is the major cause of nutritional myodegeneration ("white muscle disease") in cattle. Even after a massive effort for its prevention, this disease still causes significant losses to cattle producers. Selenium deficiency can be marginal causing subclinical effects in cattle and strongly influences the immune system affecting cattle health and performance. Cows experiencing this disease are deficient in Se, and normally have weak calves that have increased susceptibility to diseases, poor reproductive performance and a higher incidence of retained fetal membrane. The function of selenium in the immune system is based on its participation in the structure and function of several enzymes that are directly linked to neutralization of ROS, among which glutathione peroxidase is a major antioxidant reducing the excessive ROS and cell damage due to oxidative stress (Herdt and Hoff, 2011). There is evidence that Se deficiency in cattle increases the pathogenicity of some viruses (Beck, 2007), and negatively affects neutrophil migration into tissue that experience inflammation (Maddox et al., 1999). In contrast, Se supplementation enhances both arms of the adaptive immune system including antibody production and T-cell number and functions (Maggini et al., 2007).

Zinc is one of the trace minerals with a wider range of influences in the animal body. It participates in the structure and function of more than 2500 enzymes involved in metabolism and DNA replication. Zn plays an important role in the immune system including participation in the proliferation and differentiation of lymphocytes, neutrophils and macrophages functions and transit, pro-inflammatory cytokines production, regulation and secretion (specific in the case of IL-2), T-cells clonal expansion, and activation and antibody production by the B-cells (reviewed by Palomares et al., 2016a).

Recent studies in calves showed the beneficial effects of the strategic use of trace minerals in an injectable formulation on the humoral immune response to common vaccines (Arthington and Havenga, 2012; Palomares et al., 2016; Roberts et al., 2106; Bittar et al., 2017). However, it is relevant to be aware that the cattle population evaluated in these studies did not have trace minerals deficiency. In this regard, the authors offered additional scientific data to reinforce and support the beneficial effect of trace minerals supplements even in cattle with sufficient mineral levels. Several trace mineral supplement formulations with different administration routes are available in the market to be used in cattle. There is no one size fits all and producers' decisions need to base on several factors before choosing an adequate trace minerals supplement available. Factors to be considered are the mineral status in the herd (if it is normal or there are borderline or severe deficiencies), duration of supplementation required, the bioavailability of mineral components and administration ease (some formulations are injectable, bolus or capsule, salt block, or to be added to the feed), single mineral supplementation in the formulation to be used or formulation composed with multiple trace minerals. Nowadays there is an ongoing debate regarding the preferred route of trace minerals administration. One of the advantages of oral trace minerals formulation is the administration ease because there is no need for handling the herd in restraint facilities. Nonetheless, the constant maintenance of the feeder to ensure enough trace minerals available to the cattle is required, and variation in dry matter intake can account for heterogeneous supplementation on individual basis. For instance, weaker cattle that might receive more benefits from mineral supplementation will be the ones with lower dry matter and trace mineral intake, especially if inadequate feed space exists. Boluses and capsules, on the other hand, provide a homogenous administration through the herd, ensuring adequate dosing. However, the additional and unpleasant animal handling needs to be considered as well as the relatively slow rise in trace mineral concentration in the blood due to slow absorption that may occur depending on the formulation. Despite the need of cattle restraint, the injection of trace minerals has several benefits such as adequate dosing depending on animal needs and quick rise in tissue mineral concentration. Therefore, the injectable trace minerals formulations are additional sources to be used by the producers. Injectable formulations also have the benefit of allowing producers to administer the trace minerals in situations in which the dry matter intake might not be well controlled, and when it is relatively difficult to supplement or achieve higher levels of dry matter intake. Therefore, it is a relatively easier administration route on a large scale when compared to bolus or capsule.

There are some benefits for trace minerals administration even in case of sufficing trace mineral concentrations in cattle, which certainly is in a contrary situation in which the trace minerals deficiency is present. The benefits of trace minerals in the innate immune response, including neutrophil and macrophage transit and function, have a great impact at the beginning of an infection. The effects of strategically using trace minerals on the adaptive immune response, by enhanced antibody production and T-cell response, provide the most benefit in situations before vaccination, disease challenges, and stressors. Additionally, trace mineral use in newborn, especially in the dairy setting, was justified due to the lower concentration of some trace minerals in colostrum. It was reported that calves supplemented within the first month of life with an injectable and multiple trace mineral formulation had reduced morbidity and mortality (Teixeira et al., 2014).

The profile of trace minerals of an animal can be assessed by different approaches. Hepatic mineral analysis might represent the gold standard to assess animals' mineral status. However, mineral analysis in whole blood or serum still has its value due to the practicality of the collection; nonetheless, interpretation should be evaluated with care. Acceptable ranges of trace minerals concentration in blood (serum and whole blood) and hepatic tissue can be consulted on Tables 1 and 2 respectively. A common challenge in analyzing trace minerals and interpreting the test results is the inconsistency in the units used for their measurements. To simplify the conversion of different units used, there is an ease conversion table to facilitate standardization related to trace minerals communication (Table 3. Adapted from Herdt and Hoff, 2011). It is important to manage trace minerals nutrition in a holistic approach in which not only the mineral status of cattle is assessed, but also the contents of trace minerals provided by feed, grass, feed supplements used as well as water consumed by the herd. That gives additional information to make better decisions in the sources of minerals and potential inhibitors including the high levels of undesired macro and trace minerals being ingested by cattle.

Table 1. *Reference ranges for bovine trace mineral concentrations in serum and whole blood. Adapted from Herdt and Hoff, 2011.*

	Adults and Growing Calves	Neonates
Cobalt (ng/mL)	0.17–2.0	0.18–2.3
Copper (µg/mL)	0.6–1.1	0.3–1.0
Iron (µg/mL)	1.1–2.5	0.25–1.7
Manganese (ng/mL)	0.9–6.0	1.0–4.0
Molybdenum (ng/mL)	2.0–35	1.0–15
Selenium (ng/mL)	65–140	20–70
Whole-blood selenium (ng/mL)	120–300	100–250
Zinc (µg/mL)	0.6–1.9	0.6–1.75

Table 2. *Reference ranges for bovine hepatic trace mineral concentrations. Values are expressed on a dry tissue basis. Adapted from Herdt and Hoff, 2011.*

	Adults and Growing Calves	Neonates
Cobalt (µg/g)	0.10–0.4	0.06–0.4
Copper (µg/g)	50–600	125–650
Iron (µg/g)	140–1000	160–1000
Manganese (µg/g)	5–15	3.5–15
Molybdenum (µg/g)	1–4	0.6–3
Selenium (µg/g)	0.7–2.5	1.5–3.5
Zinc (µg/g)	90–400	120–400

Table 3. *Useful mass unit concentration conversions. Adapted from Herdt and Hoff, 2011.*

ng/mL = µg/L= parts per billion (ppb)

µg/mL = mg/L = parts per million (ppm)

ng/g = µg/kg = parts per billion (ppb)

µg/g = mg/kg = parts per million (ppm)

In summary, trace minerals can be an additional contribution, when well used, to help producers achieve high-level cattle health and productivity. Nevertheless, supplementation of trace minerals is not a solution but an aid to achieve optimal performance of cattle. Other factors need to be addressed before determining the source, level and management strategy for mineral supplementation. The most important and basic factors to consider include but are not limited to, overall good nutrition, low-stress cattle handle and management, biosecurity programs and reduced pathogen burden in cattle housing, and proper vaccine storage, handling, and use. In conclusion, the veterinarians, nutritionists, animal scientists and cattle producers can utilize mineral supplementations to increase cattle production and herd health and possibly reduce the use of antibiotics, especially during the current challenging days when the society pressures food producers for higher food quality. Nonetheless, the role of a veterinarian in analyzing, guiding, and working with producers can exponentially bring high standards to the cattle industry and consequently to the community of consumers.

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Important Dates

2017-2018

Georgia Dairy Conference

- January 15-17, 2018
- Savannah Marriott Riverfront, 100 General McIntosh Boulevard, Savannah, GA 31401
- http://www.gadairyconference.com/

2018 Florida Ruminant Nutrition Symposium

- February 5 - 7, 2018
- http://dairy.ifas.ufl.edu/rns/info.shtml

2018 UGA Spring Dairy Show

- April 7th, 2018

Top GA DHIA By Test Day Milk Production – September, 2017										
					Test Day Average				Yearly Average	
Herd	County	Br.	Test Date	[1]Cows	% Days in Milk	Milk	% Fat	TD Fat	Milk	Lbs. Fat
DAVE CLARK*	Morgan	H	8/28/2017	1202	90	94.8	4	3.41	30512	1171
RODGERS' HILLCREST FARMS INC.*	Lumpkin/McDuffie	H	9/6/2017	438	87	94	3.8	3.14	31510	1133
DANNY BELL*	Morgan	H	9/7/2017	303	91	93	3.6	2.93	28531	1116
J.EVERETT WILLIAMS*	Morgan	X	8/21/2017	1986	87	90.9			28335	
SCOTT GLOVER	Wheeler/White	H	8/31/2017	220	88	87.9	3.9	3.03	26282	983
TROY YODER	McIntosh/Macon	H	8/12/2017	271	89	80.9	4	2.61	25078	1004
A & J DAIRY*	Wilkes	H	9/29/2017	398	92	80.5			27794	
EBERLY FAMILY FARM*	Burke/Butts	H	8/28/2017	853	88	79.6	3.6	2.45	26725	963
SCHAPPMAN DAIRY*	Whitfield/Wilcox	H	8/31/2017	800	90	79.2	3.6	2.43	25881	937
DOUG CHAMBERS	Jones	H	9/26/2017	418	89	75.9	3.5	2.32	25552	894
R & D DAIRY*	Laurens/Lee	H	8/29/2017	344	89	75.3	3.9	2.52	23906	937
PHIL HARVEY #2*	Putnam	H	8/30/2017	1242	87	74.6	3.7	2.46	25869	953
COASTAL PLAIN EXP STATION*	Tift	H	9/19/2017	284	90	73.5	3.6	2.3	24890	918
SOUTHERN SANDS FARM	Burke/Butts	H	8/31/2017	72	87	71.3	3.7	2.06	24399	862
OCMULGEE DAIRY	Henry/Houston	H	8/30/2017	323	86	69.1	3.4	1.89	22503	794
AMERICAN DAIRYCO-GEORGIA,LLC.*	Miller/Mitchell	H	9/6/2017	4050	90	68.9	3.5	2.1	24764	921
IRVIN R YODER	McIntosh/Macon	H	8/14/2017	225	92	66	3.7	2.17	25200	929
HICKORY HEAD DAIRY*	Brooks	H	9/5/2017	2194	87	65.9	4.8	2.66	22687	857
RUFUS YODER JR	McIntosh/Macon	H	9/2/2017	143	90	65.8	3.2	1.77	22478	788
LARRY MOODY	Ware/Warren	H	9/29/2017	1067	89	64.7	3.4	1.96	24065	769

[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 – September 2017										
					Test Day Average				Yearly Average	
Herd	**County**	**Br.**	**Test Date**	**Cows**	**% Days in Milk**	**Milk**	**% Fat**	**TD Fat**	**Milk**	**Lbs. Fat**
DAVE CLARK*	Morgan	H	8/28/2017	1202	90	94.8	4	3.41	30512	1171
RODGERS' HILLCREST FARMS INC.*	Lumpkin/McDuffie	H	9/6/2017	438	87	94	3.8	3.14	31510	1133
SCOTT GLOVER	Wheeler/White	H	8/31/2017	220	88	87.9	3.9	3.03	26282	983
DANNY BELL*	Morgan	H	9/7/2017	303	91	93	3.6	2.93	28531	1116
HICKORY HEAD DAIRY*	Brooks	H	9/5/2017	2194	87	65.9	4.8	2.66	22687	857
TROY YODER	McIntosh/Macon	H	8/12/2017	271	89	80.9	4	2.61	25078	1004
R & D DAIRY*	Laurens/Lee	H	8/29/2017	344	89	75.3	3.9	2.52	23906	937
PHIL HARVEY #2*	Putnam	H	8/30/2017	1242	87	74.6	3.7	2.46	25869	953
EBERLY FAMILY FARM*	Burke/Butts	H	8/28/2017	853	88	79.6	3.6	2.45	26725	963
SCHAPPMAN DAIRY*	Whitfield/Wilcox	H	8/31/2017	800	90	79.2	3.6	2.43	25881	937
DOUG CHAMBERS	Jones	H	9/26/2017	418	89	75.9	3.5	2.32	25552	894
COASTAL PLAIN EXP STATION*	Tift	H	9/19/2017	284	90	73.5	3.6	2.3	24890	918
BERRY COLLEGE DAIRY	Fayette/Floyd	J	8/29/2017	34	86	53.6	4.6	2.26	17196	793
HORST CREST FARMS	Burke/Butts	H	9/27/2017	167	85	60.6	4	2.18	20366	763
IRVIN R YODER	McIntosh/Macon	H	8/14/2017	225	92	66	3.7	2.17	25200	929
AMERICAN DAIRYCO-GEORGIA,LLC.*	Miller/Mitchell	H	9/6/2017	4050	90	68.9	3.5	2.1	24764	921
BUD BUTCHER	Cook/Coweta	H	9/15/2017	317	91	64.1	3.7	2.09	21420	779
JOHN WESTSTEYN*	Pike/Pierce	X	8/31/2017	1233	90	56.7	4.1	2.08	20684	784
SOUTHERN SANDS FARM	Burke/Butts	H	8/31/2017	72	87	71.3	3.7	2.06	24399	862
CHARLES STEWART	Grady/Greene	X	8/8/2017	100	85	62.9	4.1	2.06	19400	756

[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 – October 2017										
					Test Day Average				Yearly Average	
Herd	County	Br.	Test date	[1]Cows	% Days in Milk	Milk	% Fat	TD Fat	Milk	Lbs. Fat
DANNY BELL*	Morgan	H	10/5/2017	293	91	96.1	3.6	3.01	28655	1113
DAVE CLARK*	Morgan	H	10/2/2017	1197	90	94.9	4	3.39	30710	1192
RODGERS' HILLCREST FARMS INC.*	Lumpkin/McDuffie	H	10/23/2017	442	87	93.6	3.7	2.94	31298	1136
SCOTT GLOVER	Wheeler/White	H	9/28/2017	218	88	84.4	3.3	2.48	26287	979
EBERLY FAMILY FARM*	Burke/Butts	H	10/2/2017	868	88	81.1	3.6	2.57	26602	958
A & J DAIRY*	Wilkes	H	9/29/2017	398	92	80.5			27794	
SCHAPPMAN DAIRY*	Whitfield/Wilcox	H	10/30/2017	793	89	78.2	3.6	2.38	25991	945
PHIL HARVEY #2*	Putnam	H	10/27/2017	1139	87	77.7	3.6	2.44	25568	940
DOUG CHAMBERS	Jones	H	10/24/2017	427	89	77.3	3.6	2.38	25629	898
TROY YODER	McIntosh/Macon	H	9/30/2017	270	88	75.2	4.3	2.54	25210	1016
R & D DAIRY*	Laurens/Lee	H	10/10/2017	335	89	74.8	3.8	2.52	23828	940
COASTAL PLAIN EXP STATION*	Tift	H	10/13/2017	292	90	73.4	3.7	2.3	24883	902
LARRY MOODY	Ware/Warren	H	10/28/2017	1051	89	70.4	3.3	2.03	24103	795
OCMULGEE DAIRY	Henry/Houston	H	10/26/2017	336	87	69.6	3.8	2.2	22744	810
AMERICAN DAIRYCO-GEORGIA,LLC.*	Miller/Mitchell	H	10/4/2017	4078	90	69.3	3.3	1.98	24751	914
VISSCHER DAIRY*	Jeff Davis/Jefferson	H	10/13/2017	905	91	68.6	3.6	2.01	20323	670
HICKORY HEAD DAIRY*	Brooks	H	10/9/2017	2169	87	68.6	4.8	2.6	22806	876
SOUTHERN SANDS FARM	Burke/Butts	H	10/5/2017	79	88	67.5	3.6	1.93	24768	875
MARTIN DAIRY L. L. P.	Hart/Heard	H	10/11/2017	346	90	67.1	3.9	2.21	23834	926
WILLIAMS DAIRY	Taliaferro	H	10/26/2017	136	89	66	3.6	2.22	21993	829

[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 - October 2017										
					Test Day Average				Yearly Average	
Herd	County	Br.	Test Date	[1]Cows	% Days in Milk	Milk	% Fat	TD Fat	Milk	Lbs. Fat
DAVE CLARK*	Morgan	H	10/2/2017	1197	90	94.9	4	3.39	30710	1192
DANNY BELL*	Morgan	H	10/5/2017	293	91	96.1	3.6	3.01	28655	1113
RODGERS' HILLCREST FARMS INC.*	Lumpkin/McDuffie	H	10/23/2017	442	87	93.6	3.7	2.94	31298	1136
HICKORY HEAD DAIRY*	Brooks	H	10/9/2017	2169	87	68.6	4.8	2.6	22806	876
EBERLY FAMILY FARM*	Burke/Butts	H	10/2/2017	868	88	81.1	3.6	2.57	26602	958
TROY YODER	McIntosh/Macon	H	9/30/2017	270	88	75.2	4.3	2.54	25210	1016
R & D DAIRY*	Laurens/Lee	H	10/10/2017	335	89	74.8	3.8	2.52	23828	940
SCOTT GLOVER	Wheeler/White	H	9/28/2017	218	88	84.4	3.3	2.48	26287	979
PHIL HARVEY #2*	Putnam	H	10/27/2017	1139	87	77.7	3.6	2.44	25568	940
DOUG CHAMBERS	Jones	H	10/24/2017	427	89	77.3	3.6	2.38	25629	898
SCHAPPMAN DAIRY*	Whitfield/Wilcox	H	10/30/2017	793	89	78.2	3.6	2.38	25991	945
COASTAL PLAIN EXP STATION*	Tift	H	10/13/2017	292	90	73.4	3.7	2.3	24883	902
WILLIAMS DAIRY	Taliaferro	H	10/26/2017	136	89	66	3.6	2.22	21993	829
MARTIN DAIRY L. L. P.	Hart/Heard	H	10/11/2017	346	90	67.1	3.9	2.21	23834	926
OCMULGEE DAIRY	Henry/Houston	H	10/26/2017	336	87	69.6	3.8	2.2	22744	810
BUD BUTCHER*	Cook/Coweta	H	10/10/2017	312	91	59.6	3.9	2.12	21509	784
TWIN OAKS FARM	Jeff Davis/Jefferson	H	10/24/2017	83	90	63.5	4.3	2.09	21148	814
HORST CREST FARMS	Burke/Butts	H	10/25/2017	167	85	62.1	4	2.08	20353	766
LARRY MOODY	Ware/Warren	H	10/28/2017	1051	89	70.4	3.3	2.03	24103	795
VISSCHER DAIRY*	Jeff Davis/Jefferson	H	10/13/2017	905	91	68.6	3.6	2.01	20323	670

[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 – November 2017										
					Test Day Average				Yearly Average	
Herd	**County**	**Br.**	**Test Date**	**[1]Cows**	**% Days in Milk**	**Milk**	**% Fat**	**TD Fat**	**Milk**	**Lbs. Fat**
DAVE CLARK*	Morgan	H	10/30/2017	1218	90	96.6	4.1	3.59	30968	1213
RODGERS' HILLCREST FARMS INC.*	Lumpkin/McDuffie	H	11/27/2017	444	87	93	4	3.2	31158	1141
DANNY BELL*	Morgan	H	11/2/2017	287	90	88.8	4	3.16	28804	1114
SCOTT GLOVER	Wheeler/White	H	11/2/2017	216	87	88.7	3.6	2.89	26353	977
J.EVERETT WILLIAMS*	Morgan	X	11/6/2017	2005	87	86.5			28429	
VISSCHER DAIRY*	Jeff Davis/Jefferson	H	11/17/2017	948	91	85.3	3.5	2.42	20711	695
EBERLY FAMILY FARM*	Burke/Butts	H	11/28/2017	879	89	83.8	3.6	2.72	26791	970
A & J DAIRY*	Wilkes	H	11/1/2017	409	92	81.4			27923	
SCHAPPMAN DAIRY*	Whitfield/Wilcox	H	10/30/2017	793	89	78.2	3.6	2.38	25991	945
PHIL HARVEY #2*	Putnam	H	10/27/2017	1139	87	77.7	3.6	2.44	25568	940
DOUG CHAMBERS	Jones	H	11/21/2017	434	89	77.1	3.5	2.25	25603	899
TROY YODER	McIntosh/Macon	H	11/13/2017	284	88	76.3	4.4	2.62	25279	1030
R & D DAIRY*	Laurens/Lee	H	11/14/2017	337	89	76.1	4.1	2.79	23891	946
COASTAL PLAIN EXP STATION*	Tift	H	11/14/2017	294	90	72.3	3.8	2.38	24915	904
LARRY MOODY	Ware/Warren	H	11/29/2017	1082	89	71.9	3.3	2.05	24149	795
AMERICAN DAIRYCO-GEORGIA,LLC.*	Miller/Mitchell	H	11/1/2017	3997	90	71.7	3.4	2.15	24711	903
IRVIN R YODER	McIntosh/Macon	H	11/7/2017	232	92	71.5	4	2.4	24881	924
KENT HERMAN	Putnam	H	11/16/2017	114	89	71.3	3.5	1.66	23188	886
SOUTHERN SANDS FARM	Burke/Butts	H	11/9/2017	80	88	70.5	3.8	2.1	24972	883
OCMULGEE DAIRY	Henry/Houston	H	10/26/2017	336	87	69.6	3.8	2.2	22744	810

[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 –November 2017										
					Test Day Average				Yearly Average	
Herd	**County**	**Br.**	**Test Date**	**[1]Cows**	**% Days in Milk**	**Milk**	**% Fat**	**TD Fat**	**Milk**	**Lbs. Fat**
DAVE CLARK*	Morgan	H	10/30/2017	1218	90	96.6	4.1	3.59	30968	1213
RODGERS' HILLCREST FARMS INC.*	Lumpkin/McDuffie	H	11/27/2017	444	87	93	4	3.2	31158	1141
DANNY BELL*	Morgan	H	11/2/2017	287	90	88.8	4	3.16	28804	1114
SCOTT GLOVER	Wheeler/White	H	11/2/2017	216	87	88.7	3.6	2.89	26353	977
R & D DAIRY*	Laurens/Lee	H	11/14/2017	337	89	76.1	4.1	2.79	23891	946
EBERLY FAMILY FARM*	Burke/Butts	H	11/28/2017	879	89	83.8	3.6	2.72	26791	970
TROY YODER	McIntosh/Macon	H	11/13/2017	284	88	76.3	4.4	2.62	25279	1030
HICKORY HEAD DAIRY*	Brooks	H	10/9/2017	2169	87	68.6	4.8	2.6	22806	876
PHIL HARVEY #2*	Putnam	H	10/27/2017	1139	87	77.7	3.6	2.44	25568	940
VISSCHER DAIRY*	Jeff Davis/Jefferson	H	11/17/2017	948	91	85.3	3.5	2.42	20711	695
IRVIN R YODER	McIntosh/Macon	H	11/7/2017	232	92	71.5	4	2.4	24881	924
COASTAL PLAIN EXP STATION*	Tift	H	11/14/2017	294	90	72.3	3.8	2.38	24915	904
SCHAPPMAN DAIRY*	Whitfield/Wilcox	H	10/30/2017	793	89	78.2	3.6	2.38	25991	945
MARTIN DAIRY L. L. P.	Hart/Heard	H	11/13/2017	350	91	66.6	4	2.28	23866	926
DOUG CHAMBERS	Jones	H	11/21/2017	434	89	77.1	3.5	2.25	25603	899
WILLIAMS DAIRY	Taliaferro	H	10/26/2017	136	89	66	3.6	2.22	21993	829
WHITEHOUSE FARM	McIntosh/Macon	H	11/9/2017	238	91	64.6	4	2.22	22103	797
OCMULGEE DAIRY	Henry/Houston	H	10/26/2017	336	87	69.6	3.8	2.2	22744	810
AMERICAN DAIRYCO-GEORGIA,LLC.*	Miller/Mitchell	H	11/1/2017	3997	90	71.7	3.4	2.15	24711	903
SOUTHERN SANDS FARM	Burke/Butts	H	11/9/2017	80	88	70.5	3.8	2.1	24972	883

[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 – September 2016									
Herd	**County**	**Test Date**	**Br.**	**Cows**	**Milk-Rolling**	**SCC-TD-Average Score**	**SCC-TD-Weight Average**	**SCC-Average Score**	**SCC-Wt.**
DAVID ADDIS	Whitfield/Wilcox	9/14/2017	H	39	17415	1.4	78	1.1	53
BERRY COLLEGE DAIRY	Fayette/Floyd	8/29/2017	J	34	17196	1.6	57	1.8	94
JAMES W MOON	Morgan	9/6/2017	H	135	18869	1.9	119	1.9	144
SOUTHERN SANDS FARM	Burke/Butts	8/31/2017	H	72	24399	1.9	207	2	174
DAVE CLARK*	Morgan	8/28/2017	H	1202	30512	1.9	226	2	203
FRANKS FARM	Burke/Butts	9/26/2017	B	168	16893	2	115	2.9	179
TROY YODER	McIntosh/Macon	8/12/2017	H	271	25078	2	137	2.1	146
ROGERS FARM SERVICES	Talbot/Tattnall	9/18/2017	H	177	18254	2.2	230	2.7	244
DANNY BELL*	Morgan	9/7/2017	H	303	28531	2.2	231	2.1	175
EBERLY FAMILY FARM*	Burke/Butts	8/28/2017	H	853	26725	2.3	208	2.4	220
OVERHOLT FARMS	McIntosh/Macon	8/10/2017	H	234	18337	2.3	228	2.6	251
HALE DAIRY	Oconee	9/14/2017	H	136	14094	2.4	163	2.9	288
IRVIN R YODER	McIntosh/Macon	8/14/2017	H	225	25200	2.5	217	2.2	147
MARTIN DAIRY L. L. P.	Hart/Heard	8/24/2017	H	323	23829	2.5	233	2.4	198
COASTAL PLAIN EXP STATION*	Tift	9/19/2017	H	284	24890	2.6	274	2.2	199
EUGENE KING	McIntosh/Macon	9/25/2017	H	119	19145	2.6	284	2.6	259
CECIL DUECK	Jeff Davis/Jefferson	8/24/2017	H	85	23356	2.7	219	2.7	248
WALNUT BRANCH FARM	Washington	9/23/2017	H	334	20602	2.7	223	2.6	218
JEFF WOOTEN JEFF*	Putnam	9/5/2017	H	288	17880	2.7	236	2.4	198
RUFUS YODER JR	McIntosh/Macon	9/2/2017	H	143	22478	2.7	251	2.5	210

[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 – October 2017									
Herd	**County**	**Test Date**	**Br.**	**Cows**	**Milk-Rolling**	**SCC-TD-Average Score**	**SCC-TD-Weight Average**	**SCC-Average Score**	**SCC-Wt.**
DAVID ADDIS	Whitfield/Wilcox	10/18/2017	H	30	17604	1	46	1.2	55
BERRY COLLEGE DAIRY	Fayette/Floyd	9/28/2017	J	33	17192	1.2	34	1.8	89
JAMES W MOON	Morgan	10/4/2017	H	134	18858	1.5	103	1.9	137
FRANKS FARM	Burke/Butts	9/26/2017	B	168	16893	2	115	2.9	179
DAVE CLARK*	Morgan	10/2/2017	H	1197	30710	2	231	2	212
DANNY BELL*	Morgan	10/5/2017	H	293	28655	2	246	2.1	182
IRVIN R YODER	McIntosh/Macon	9/29/2017	H	227	24941	2.2	134	2.1	141
RODGERS' HILLCREST FARMS INC.*	Lumpkin/McDuffie	10/23/2017	H	442	31298	2.2	182	2.1	171
MARTIN DAIRY L. L. P.	Hart/Heard	10/11/2017	H	346	23834	2.3	151	2.4	192
EBERLY FAMILY FARM*	Burke/Butts	10/2/2017	H	868	26602	2.3	194	2.3	213
JEFF WOOTEN*JEFF	Putnam	10/3/2017	H	283	18121	2.4	138	2.4	196
SOUTHERN SANDS FARM	Burke/Butts	10/5/2017	H	79	24768	2.4	172	2	154
COASTAL PLAIN EXP STATION*	Tift	10/13/2017	H	292	24883	2.4	225	2.2	205
BRENNEMAN FARMS	McIntosh/Macon	10/11/2017	H	36	20112	2.4	384	1.7	164
SCOTT GLOVER	Wheeler/White	9/28/2017	H	218	26287	2.5	141	2.1	138
R & D DAIRY*	Laurens/Lee	10/10/2017	H	335	23828	2.6	203	2.8	289
WALNUT BRANCH FARM	Washington	9/23/2017	H	334	20602	2.7	223	2.6	218
SOUTHERN ROSE FARMS	Laurens/Lee	9/25/2017	H	110	20362	2.8	309	2.6	233
HALE DAIRY	Oconee	10/12/2017	H	141	14235	2.8	342	3	298
UNIV OF GA DAIRY FARM	Clarke	10/5/2017	H	106	22257	2.9	173	2.6	201

[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 – November 2017									
Herd	**County**	**Test Date**	**Br.**	**Cows**	**Milk-Rolling**	**SCC-TD-Average Score**	**SCC-TD-Weight Average**	**SCC-Average Score**	**SCC-Wt.**
DAVID ADDIS	Whitfield/Wilcox	10/18/2017	H	30	17604	1	46	1.2	55
BERRY COLLEGE DAIRY	Fayette/Floyd	11/2/2017	J	35	17082	1.7	55	1.8	87
JAMES W MOON	Morgan	11/14/2017	H	132	18919	1.9	105	1.9	140
ALEX MILLICAN	Walker	11/25/2017	H	104	18660	2	142	2	192
IRVIN R YODER	McIntosh/Macon	11/7/2017	H	232	24881	2.2	137	2.1	141
JEFF WOOTEN*JEFF	Putnam	11/6/2017	H	284	18289	2.2	159	2.4	196
DAVE CLARK*	Morgan	10/30/2017	H	1218	30968	2.2	260	2	221
DANNY BELL*	Morgan	11/2/2017	H	287	28804	2.3	274	2.1	191
SOUTHERN SANDS FARM	Burke/Butts	11/9/2017	H	80	24972	2.4	153	1.9	148
EBERLY FAMILY FARM*	Burke/Butts	11/28/2017	H	879	26791	2.4	210	2.3	209
RODGERS' HILLCREST FARMS INC.*	Lumpkin/McDuffie	11/27/2017	H	444	31158	2.4	229	2.1	181
BRENNEMAN FARMS	McIntosh/Macon	10/11/2017	H	36	20112	2.4	384	1.7	164
MARTIN DAIRY L. L. P.	Hart/Heard	11/13/2017	H	350	23866	2.5	199	2.4	189
R & D DAIRY*	Laurens/Lee	11/14/2017	H	337	23891	2.5	212	2.8	286
COASTAL PLAIN EXP STATION*	Tift	11/14/2017	H	294	24915	2.5	235	2.2	207
SCOTT GLOVER	Wheeler/White	11/2/2017	H	216	26353	2.7	187	2.2	145
KEN STEWART	Grady/Greene	11/28/2017	H	145	19532	2.7	201	2.8	240
BUD BUTCHER	Cook/Coweta	11/8/2017	H	317	21569	2.8	272	2.9	308
BOBBY JOHNSON	Grady/Greene	11/24/2017	X	608	19898	2.8	279	2.4	202
HALE DAIRY	Oconee	10/12/2017	H	141	14235	2.8	342	3	298

[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).

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