Animal and Dairy Science Department
Rhodes Center for Animal & Dairy Science

Telephone: (706) 542-2581
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GEORGIA DAIRYFAX

http://www.ces.uga.edu/Agriculture/asdsvm/Dairyscience/dairypage.HTML November/December 2003

Dear Dairymen:

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

The following information is included:

Sincerely,

James W. Smith
Extension Dairy Scientist

County Extension Director or County Agent

/jlo

The University of Georgia
College of Agricultural and Environmental Sciences
Cooperative Extension Service/Athens, GA 30602-4356

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December 11, 2003

TO: Dairyfax Newsletter Mailing List

Due to budget constraints, the Dairyfax Newsletter will be switching to on-line delivery to reduce printing and mailing costs. The Dairyfax Newsletter can be viewed on-line at http://www.ces.uga.edu/Agriculture/asdsvm/dairypage.HTML.

The current edition plus archived editions are at this site.

Please fill out the form below and return no later than January 15, 2004. If you do not return the form by the requested date, your name will be removed from the mailing list.

Sincerely,

Robert L. Stewart
Extension Coordinator

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Dairyfax Newsletter
Animal & Dairy Science Dept.
University of Georgia
425 River Road
Athens, GA 30602

Happy Holidays!

Fluid Therapy for Calf Diarrhea

Dana Cole DVM, Dip, ACVIM, PhD
University of Georgia

Calf diarrhea is a common problem among dairies. As a result, there are numerous electrolyte formulations on the market designed to replace what is lost during a diarrhea episode. Your veterinarian can help you select a fluid therapy regimen for dealing with calf diarrhea on your farm, but here are a few tips to get you started.

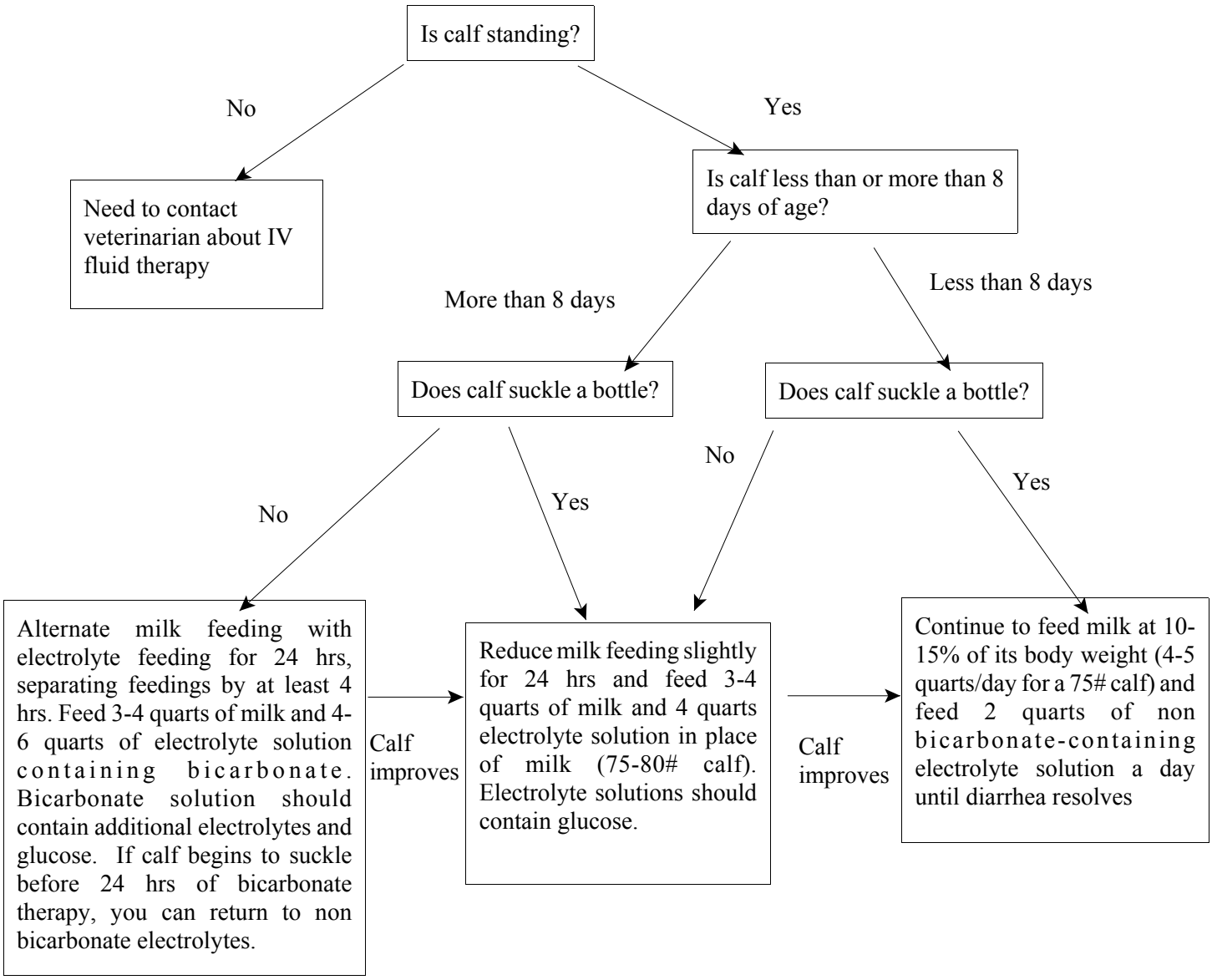
The first thing to consider is the attitude of the calf. If the calf is somewhat depressed and has a weak suckle reflex it needs more aggressive electrolyte replacement than one that is still suckling the bottle. If the calf is unable or refuses to stand, oral fluid therapy is insufficient and IV fluids are necessary to correct the electrolyte imbalances.

The second thing to consider is the age of the calf. The calf that is less than 8 days old with diarrhea is different from the calf with diarrhea that is over 8 days old. Calves 8 days or less of age are not as likely to have severe acid-base balance problems as the older calves. Consequently, electrolytes can often be replaced in these calves using a supplement that does not contain bicarbonate. In contrast, older calves are more likely to benefit from bicarbonate replacement.

In principal the fluid intake of a calf with diarrhea should be increased to prevent dehydration. Milk should be continued to avoid severe weight losses and promote healing of the damaged gastrointestinal tract, but the volume fed will be varied to adjust for the additional intake of electrolyte solutions.

There has been some evidence that feeding a gelling agent may also assist with diarrhea therapy. For this purpose, a package of jelly pectin may be added to 2 quarts of electrolyte solution.

Calf diarrhea can be caused by numerous different agents, and the therapy may vary depending upon the length of time the calf is sick and the severity of the signs. You should consult your veterinarian with specific questions. However, the following treatment algorithm can help guide you in treatment of the young calf (3 weeks or less) with diarrhea.


Is calf standing?
No
Yes
Need to contact veterinarian about IV fluid therapy
Is calf less than or more than 8 days of age?
More than 8 days
Less than 8 days
Does calf suckle a bottle?
Does calf suckle a bottle?
No
Yes
No
Yes
Alternate milk feeding with electrolyte feeding for 24 hrs, separating feedings by at least 4 hrs. Feed 3-4 quarts of milk and 4-6 quarts of electrolyte solution containing bicarbonate. Bicarbonate solution should contain additional electrolytes and glucose. If calf begins to suckle before 24 hrs of bicarbonate therapy, you can return to non bicarbonate electrolytes.
Calf improves
Reduce milk feeding slightly for 24 hrs and feed 3-4 quarts of milk and 4 quarts electrolyte solution in place of milk (75-80# calf). Electrolyte solutions should contain glucose.
Calf improves
Continue to feed milk at 10-15% of its body weight (4-5 quarts/day for a 75# calf) and feed 2 quarts of non bicarbonate-containing electrolyte solution a day until diarrhea resolves

Are You Feeding Too Much Phosphorus?

John K. Bernard
Dairy Research and Extension

The results of a survey of dairy producers and agribusiness professionals on factors they considered important for relocation were recently reported in the *Journal of Dairy Science*. The number two concern cited was availability of land for waste management and the number five concern was the complexity of laws governing waste management. These concerns clearly indicate the importance of waste management in the day to day operation of a dairy farm today.

In the same issue of the *Journal of Dairy Science*, a group of researchers in the Northeast US reported the results of a field survey examining phosphorus feeding practices. These researchers surveyed dairy producers in the region as well as conducted on-site visits to collect feed and fecal samples for phosphorus analysis. The results of their study indicated that the average dairy fed 34% more phosphorus than recommended by the National Research Council (NRC). Approximately 84% of the rations for these farms were formulated by professionals, either feed company representatives, nutritional consultants or veterinarians.

Most of the participants in the survey indicated that they fed the higher levels of phosphorus at the recommendation of the individual formulating the ration because of concerns for decreased reproduction and possibly milk production if phosphorus concentrations in the diet were decreased. Previously reported studies from Wisconsin and Ohio have not shown any negative effect on milk yield or reproduction related to feeding diets with lower concentrations of phosphorus that meet NRC requirements. The survey results actually indicated that for each 0.05% increase in dietary phosphorus, milk yield decreased 2.5 lb/cow/day. There may have been other factors involved since this was not a controlled feeding study, but the data represent 617 dairy farms with over 56,000 cows. These researchers are also collecting reproduction data from more than 25,000 cows on 100 commercial dairies over a three year period. Preliminary data from the first year do not indicate any difference in conception rate, heat detection rate, pregnancy rate, days to first breeding or days open related to feeding lower concentrations of phosphorus.

As part of the on-site visit, the researchers collected diet and fecal samples. Fecal phosphorus concentrations increased as phosphorus in the diet increased. The majority of the excess phosphorus in the fecal samples was water soluble or would be considered to be readily digestible. As phosphorus concentrations in waste increase, more land is required to prevent runoff and meet nutrient management regulations.

These results support previous findings that most dairy rations are formulated to contain excess phosphorus. Producers should question the long term wisdom of paying someone to formulate rations that contain phosphorus in excess of that needed to support cow health, milk yield and reproduction. The end result of feeding excess phosphorus is higher feed cost and greater phosphorus excretion in manure, ultimately increasing waste disposal cost and limiting future expansion.

Plan for Fall - Plan A or B?

William M. Graves
Extension Dairy Scientist

It's time to look at the choices available when trying to get your herd bred this fall. Let's start with Plan A. Prostaglandins (PGF) are helpful in bringing groups of animals into heat. They are generally the most economical to use as well. Animals must be cycling and heat detection must be very efficient for prostaglandin programs to be successful. These programs can be used on cows and heifers, unlike the ovulation synchronization programs (Plan B) that work best on cows and will be discussed later.

Weekly or bi-weekly controlled PGF breeding programs are a useful and economical way to use heat synchronization procedures with current dairy reproductive management systems. Prostaglandins require a functional corpus luteum (CL) on the ovary for the animal to respond. If the animal is between days 6 and 16 of her cycle, she will generally come into heat 36 to 72 hours after injection of the drug.

The most popular program is the Monday Morning Program (Pfizer Animal Health), which recommends you begin with a 30-day postpartum examination as part of a monthly herd health program. All healthy cycling cows 50 days postpartum are candidates. The producer selects a day of the week, usually Monday.

On Monday morning, the dairy producer gives any cows that are 50 days or greater postpartum an injection of prostaglandin and checks for heat the remainder of the week. Any cow observed in heat during the week is inseminated 8 to 12 hours later. Most cows will come into heat by Friday. Any cows not seen in heat are re-injected the following Monday morning and the same procedure is followed. Any cow not observed in heat and inseminated after three weeks of injections is recommended for examination.

The benefits of this program are that cows come into heat at a predetermined time, thus aiding in heat detection efficiency. Cows also come in heat in groups, increasing estrus activity and, hopefully, heat detection efficiency.

Many producers no longer want to worry with checking heats in Georgia and rely on ovulation synchronization and timed AI to get cows bred (Plan B). Georgia producers refer to this procedure as "C-L-C." Two injections of GnRH, seven days before and two days after prostaglandin (PGF_{2a}) will effectively synchronize ovulation in more than 90 percent of lactating cows treated. Time of ovulation occurs 24 to 32 hours after the second injection of GnRH.

This technique provides us the opportunity to breed all animals treated at a designated time. Animals should be bred 8 to 18 hours after the second GnRH injection. Note that animals between day 5 to 12 of their cycle respond best to Ovsynch. Heifers do not respond as well to this treatment. Administering two injections of PGF 14 days apart and 12 days prior to initiating the Ovsynch protocol has been shown to improve pregnancy rates (Presynch). There are several reports that indicate a lower dose of GnRH may be as effective. Also, ECP may be substituted for the second GnRH shot. Both ECP and less GnRH lower costs. Although Plan B does have higher overall costs, it also increases the number of animals bred.

Although heat detection rates tend to run fairly low across the southeast, Plan A has it's place. Many

herds do have a 60% or more heat detection rate. Plan A works well for those with good heat detection and looking for lower overall treatment costs.

As you plan for breeding all your fresh cows later this fall, look at Plan A or Plan B. Decide what option would work best with your management situation. Both will help you lower costly extra days open in your herd.

The University of Georgia Dairy at Athens

Lane O. Ely
Extension Dairy Scientist

Recently we received word that the plan to downsize the dairy herd to 60 milking cows as an instructional dairy was approved. Plans are being made to move a portion of the herd to Tifton. The main objective and focus of the dairy herd in Athens will be to support the teaching program in the department and provide animal experience for the majority of our students.

How to select the 60 cows to stay at the dairy turned out to be a very difficult process. Several individuals looked at the herd and its records. Each individual was asked to identify 70 cows (60 milking and 10 dry cows) to keep. Everyone used their own criteria and set their own priority on the different values. Many of the items considered included milk production, fat and protein production, mastitis, disease status, type score, age, pregnancy breeding and genetics. In general, we wanted a dairy herd that has good production, is structurally sound and has little mastitis or reproductive problems. Surprisingly, everyone agreed on the top 50 cows to keep. The next 20 cows to keep involved making decisions on 50 cows. Needless to say, many good cows could not be kept. This was expected with a herd that has been very productive, but the final selections were difficult.

Also as part of the transition, the dairy will be relying more on student labor. This will increase the opportunity for students to gain experience.

Brown mid-rib sorghum was planted this summer. It has been harvested and is in the silo. Yield was excellent with the summer rains we had. Small grains have been planted in our double cropping scheme. We need more rain this fall for both the small grains and pastures.

We look forward to the changes and the future.

Pregnancy Rate Added to DHI 202

W. M. Graves
Extension Dairy Scientist

A rough estimate of a herd's pregnancy rate can be calculated by multiplying heat detection rate by conception rate. Pregnancy rate is actually the percent of eligible cows that become pregnant over a specified period of time. These values are now being calculated by DRMS. Pregnancy rates are now printed on the DHI 202 for each test period and for the last 12 months. It will require several more months before a complete year of information will become available.

The table below illustrates pregnancy rates for the 13,500 herds that send their DHIA data to DRMS. Pregnancy rates for herds with less than 100 cows are higher than the rates for larger herds. This probably reflects the higher level of attention to details that smaller herds are able to apply during heat detection and breeding.

	---------- Pregnancy Rates ----------			
Herd Size	Average	Top 50%	Top 25%	Top 10%
30 - 99	18	16	22	27
100 - 499	15	14	18	22
500 - 999	14	15	18	20
1,000+	14	13	17	21

Source: Dr. John Clay, DRMS

To improve pregnancy rates, you must improve heat detection and conception rate efficiency. Cows should be watched three times a day for 15 to 20 minutes each. Standing to be mounted is the most reliable sign an animal is in heat. Secondary signs are indicators that a cow may be in heat or coming into or going out of heat. Cows are more active on dirt or pasture. Having more than one animal in heat can increase activity. Hormones can help bring groups of animals into heat. Good records are essential. Semen handling, placement, fertility and time of insemination affects conception as well.

TOP 20 DHIA HERDS BY TEST DAY FAT PRODUCTION

					Test Day Average				Yearly Average				
							Fat			Fat		Protein	
Herd	County	Br.	Mo.	Cows	% Days in Milk	Milk	%	Lbs.	Milk	%	Lbs.	%	Lbs.
Williams Dairy	Morgan	H	9	504	89	61.0	3.7	2.28	25912	3.6	932	2.8	727
Berry College Dairy	Floyd	J	9	29	79	47.0	4.7	2.20	20602	4.8	992	3.4	705
Wright, Whitty & Davis Dairy	Appling	H	8	1198	88	59.8	3.6	2.13	20688				
Ralph Adamson Jr.	Lamar	H	9	419	80	57.3	3.5	1.98	19449	3.6	694	3.0	582
Agri-Fresh Dairy	Laurens	H	9	146	80	54.0	3.6	1.92					
Dave Clark	Morgan	H	9	812	78	55.2	3.4	1.88	24587	3.3	803	2.9	721
Gin Branch Farm	Laurens	H	9	48	79	45.9	4.1	1.87	19219	3.8	729	3.1	589
Ray Ward Dairy	Putnam	H	9	129	80	51.1	3.6	1.85	20925	3.8	791	3.0	623
Scott Glover	White	H	9	114	76	52.4	3.5	1.84	20505	3.8	779	3.0	615
Martin Dairy L.L.P.	Hart	H	9	318	87	52.8	3.4	1.81	21276	3.8	810	3.0	629
Brown Dean	Stephens	H	9	71	99	51.8	3.5	1.79	15267	3.3	509	3.1	467
David L. Moss	Morgan	H	9	115	82	46.7	3.8	1.79	17603	3.8	664	3.0	528
Sparkman Dairy	Colquitt	J	9	453	81	33.9	5.2	1.76	14212	4.9	697	3.5	495
Mike Troyer	Walker	J	9	80	84	36.8	4.7	1.74	13179	4.2	557	3.4	446
Ray Haynes & Sons	Hall	H	9	141	89	48.2	3.5	1.68	17117	3.7	630	3.0	516
Roberts Dairy Inc.	Jones	H	9	149	88	43.0	3.9	1.68	17929	3.7	671	3.1	548
Ocmulgee Dairy	Houston	H	9	312	79	46.3	3.6	1.65	18603	3.6	670	3.1	581
Lazy S Dairy	Worth	H	9	219	85	43.9	3.8	1.65	18767	3.4	630	3.0	571
Vista Farm	Jefferson	H	9	85	76	43.0	3.8	1.65	22984	3.5	810	3.0	696
Bernard Sims	Catoosa	H	9	613	85	45.5	3.6	1.63	20874	3.4	704	2.9	609
Earnest R. Turk	Putnam	H	9	344	76	43.7	3.7	1.63	19973	3.8	752	3.0	608

[1]Minimum herd size of 10 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 complied from Dairy Records Management Systems Reports (Raleigh, NC).

TOP 20 DHIA HERDS BY TEST DAY FAT PRODUCTION

					Test Day Average				Yearly Average				
							Fat			Fat		Protein	
Herd	County	Br.	Mo.	Cows	% Days in Milk	Milk	%	Lbs.	Milk	%	Lbs.	%	Lbs.
Williams Dairy	Morgan	H	10	509	86	61.9	3.7	2.28	25866	3.6	933	2.8	728
Copelan	Putnam	H	10	21	95	65.4	3.4	2.21					
Wright, Whitty & Davis Dairy	Appling	H	10	1187	87	61.2	3.5	2.17	20957				
Krulic Dairy Farm, Inc.	Screven	H	10	117	88	58.4	3.6	2.10	21343				
David L. Moss	Morgan	H	10	115	89	49.0	4.2	2.04	17586	3.8	668	3.0	529
Scott Glover	White	H	10	109	76	53.4	3.8	2.02	20661	3.8	781	3.0	619
Ralph Adamson Jr.	Lamar	H	10	425	84	58.2	3.4	2.00	19884	3.5	705	3.0	593
Ray Ward Dairy	Putnam	H	10	135	84	57.3	3.5	1.99	21030	3.8	792	3.0	625
Clyde, Peggy & Eric Jones	Oglethorpe	J	10	105	92	49.1	4.1	1.99	14869	4.3	641	3.4	505
Earnest R. Turk	Putnam	H	10	349	82	50.5	3.9	1.96	20018	3.8	753	3.0	608
Rodgers' Hillcrest Farms Inc.	McDuffie	H	10	389	83	51.1	3.8	1.94	21857	4.0	873	3.0	663
Coastal Plain Exp Station	Tifton	J	10	33	91	42.7	4.5	1.94	13822	4.9	680	3.6	494
Dave Clark	Morgan	H	10	849	78	58.6	3.3	1.93	24635	3.3	806	2.9	722
Cecil Dueck	Jefferson	H	10	52	79	57.9	3.3	1.93	24633	3.3	819	3.0	729
Double C Dairy Farm	Hall	H	10	136	82	51.4	3.7	1.91	21395	3.7	797	3.0	634
Lazy S Dairy	Worth	H	10	198	85	47.0	4.0	1.90	18679	3.4	634	3.0	568
Anthony's Dairy	Sumter	H	10	820	83	53.1	3.6	1.89	21835	3.7	807	2.9	639
Al & Richard Kinder	Hart	H	10	305	90	58.5	3.2	1.88	17747	3.2	573	3.0	530
Martin Dairy LLP	Hart	H	10	318	86	51.6	3.6	1.87	21227	3.8	803	3.0	629
Copelan	Putnam	H	9	20	95	55.3	3.4	1.86					

[1]Minimum herd size of 10 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 complied from Dairy Records Management Systems Reports (Raleigh, NC).

TOP 20 DHIA HERDS BY TEST DAY MILK PRODUCTION

					Test Day Average				Yearly Average				
							Fat			Fat		Protein	
Herd	County	Br.	Mo.	Cows	% Days in Milk	Milk	%	Lbs.	Milk	%	Lbs.	%	Lbs.
Williams Dairy	Morgan	H	9	504	89	61.0	3.7	2.28	25912	3.6	932	2.8	727
Wright, Whitty & Davis Dairy	Appling	H	8	1198	88	59.8	3.6	2.13	20688				
Brooksco Dairy	Brooks	H	9	2206	87	58.3			20395				
Wayne Stoffell	Peach	H	9	812	90	57.8			21668				
Ralph Adamson Jr.	Lamar	H	9	419	80	57.3	3.5	1.98	19449	3.6	694	3.0	582
Krulic Dairy Farm, Inc.	Screven	H	9	113	90	56.9			21336				
Dave Clark	Morgan	H	9	812	78	55.2	3.4	1.88	24587	3.3	803	2.9	721
Agri-Fresh Dairy	Laurens	H	9	146	80	54.0	3.6	1.92					
Robert R. Yoder	Wayne	H	8	43	86	53.7	3.0	1.59	20947	3.3	690	2.9	615
Cecil Dueck	Jefferson	H	9	49	80	52.9	2.9	1.52	24548	3.3	813	2.9	720
Martin Dairy L.L.P.	Hart	H	9	318	87	52.8	3.4	1.81	21276	3.8	810	3.0	629
Scott Glover	White	H	9	114	76	52.4	3.5	1.84	20505	3.8	779	3.0	615
Brown Dean	Stephens	H	9	71	99	51.8	3.5	1.79	15267	3.3	509	3.1	467
Ray Ward Dairy	Putnam	H	9	129	80	51.1	3.6	1.85	20925	3.8	791	3.0	623
Larry Moody	Ware	H	9	1023	82	51.0			22479				
Terry Embry	Putnam	H	9	692	90	48.8							
Ray Haynes & Sons	Hall	H	9	141	89	48.2	3.5	1.68	17117	3.7	630	3.0	516
Myrtle Creek Farm	Macon	H	9	45	91	47.8	2.4	1.16	18566	2.6	478	3.0	562
Al & Richard Kinder	Hart	H	8	328	85	47.6	3.2	1.53	17438	3.2	566	3.0	520
Berry College	Floyd	J	9	29	79	47.0	4.7	2.20	20602	4.8	992	3.4	705
Gene Bowen	Pierce	H	9	315	89	47.0			20879				

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TOP 20 DHIA HERDS BY TEST DAY MILK PRODUCTION

					Test Day Average				Yearly Average				
							Fat			Fat		Protein	
Herd	County	Br.	Mo.	Cows	% Days in Milk	Milk	%	Lbs.	Milk	%	Lbs.	%	Lbs.
Copelan	Putnam	H	10	21	95	65.4	3.4	2.21					
Williams Dairy	Morgan	H	10	509	86	61.9	3.7	2.28	25866	3.6	933	2.8	728
Wright, Whitty & Davis Dairy	Appling	H	10	1187	87	61.2	3.5	2.17	20957				
Dave Clark	Morgan	H	10	849	78	58.6	3.3	1.93	24635	3.3	806	2.9	722
Al & Richard Kinder	Hart	H	10	305	90	58.5	3.2	1.88	17747	3.2	573	3.0	530
Krulic Dairy Farm, Inc.	Screven	H	10	117	88	58.4	3.6	2.10	21343				
Ralph Adamson Jr	Lamar	H	10	425	84	58.2	3.4	2.00	19884	3.5	705	3.0	593
Cecil Dueck	Jefferson	H	10	52	79	57.9	3.3	1.93	24633	3.3	819	3.0	729
Robert R. Yoder	Wayne	H	10	41	93	57.5	3.1	1.77	20761	3.2	668	2.9	607
Ray Ward Dairy	Putnam	H	10	135	84	57.3	3.5	1.99	21030	3.8	792	3.0	625
Wayne Stoffell	Peach	H	10	810	86	56.6			21757				
Brooksco Dairy	Brooks	H	10	2195	88	56.0			20805				
Copelan	Putnam	H	9	20	95	55.3	3.4	1.86					
Brown Dean	Stephens	H	10	69	99	54.3	3.2	1.74	15504	3.3	518	3.0	472
Robert R. Yoder	Wayne	H	9	43	86	54.3	2.7	1.49	20821	3.2	676	2.9	610
Larry Moody	Ware	H	10	1006	84	54.3			22416				
Gene Bowen	Pierce	H	10	296	93	54.2			21058				
Scott Glover	White	H	10	109	76	53.4	3.8	2.02	20661	3.8	781	3.0	619
Stovall Dairy Inc.	Madison	H	10	162	90	53.4	3.4	1.84	19133	3.5	671	3.0	572
Anthonys Dairy	Sumter	H	10	820	83	53.1	3.6	1.89	21835	3.7	807	2.9	639

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Information in this table is complied from Dairy Records Management Systems Reports (Raleigh, NC).