UF UNIVERSITY of FLORIDA

Institute of Food and Agricultural Sciences (IFAS)
Department of Animal Sciences

Dairy Update

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KERMIT BACHMAN RETIRED

Dr. Kermit Bachman retired on December 31, 2007 from the dairy faculty in the Department of Animal Sciences after a working career of 36 years with the University of Florida. Kermit Bachman received his BS and MS from the Pennsylvania State University. After the completion of his PhD at the University of Maryland, he joined the Department of Dairy Science at the University of Florida in 1971. Dr. Bachman's research interests were in the reduction of the length of the dry-period in dairy cows and the role of estrogen in the initiation of the involution of bovine mammary tissue. Dr. Bachman was very involved with the undergraduate dairy students, including supervising the Dairy Club and teaching (parts of) the courses Introduction to Animal Science and Dairy Cattle Management. His retirement without replacement raises more questions about the viability of the dairy undergraduate program at UF. Nevertheless, happy retirement, Kermit!

NEW-NEW YEARS RESOLUTIONS "NOT SO STRAY VOLTAGE"

David R. Bray

Stray Voltage. Our old friend stray voltage is just 1.0 volt AC, a point to point contact that disturbs cows, mainly in milking parlors, but it can also be at water tanks, or feeders. This is not as big of a problem in Florida as in places that have old facilities and have lots of stuff added on, barn cleaners, silo unloaders, etc. I myself wired our barn cleaner at the age of 13 years, but I think it lacked the Underwriters seal of approval.

Our modern dairies usually have licensed electricians do our work and we have many fans, manure pumps and many are exposed to wet conditions. Many of our stray voltage problems in parlors are due to extension cords, radio cords, fan cords etc. Stray voltage sometimes comes in through the power companies' lines into dairies.

Electrocution. This is a more serious problem than stray voltage because it is terminal. In the last several months I have been on two dairies that have lost multiple cows to this. So maybe your **New Year's Resolution** should be to have a licensed electrician inspect your dairy and fix any problems he finds. Look at the fans over your feed lane, a cable or lock ups with heads and necks in them, or an outlet on a metal pole that gets hit by a feed wagon or payloader and hits the lock ups and you are out a couple hundred cows or worse yet a person. **Save a cow - hire an electrician!**

FAT SUPPLEMENTATION INCREASED PREGNANCY RATES OF LACTATING COWS IN FLORIDA STUDIES

Flavio T. Silvestre, Faith M. Cullens, Charlie R. Staples, and Bill W. Thatcher

In a couple of intensive experiments that lasted many months, some very dedicated and hard-working graduate students, Flavio Silvestre and Faith Cullens, discovered some very interesting benefits of including fat in the diet of dairy cows starting in the transition period. In a summer study conducted at the University of Florida Dairy Research Unit, 47 Holstein cows were fed calcium salts of vegetable oil enriched in linoleic acid (Megalac-R, Church and Dwight, Inc.) at 2% of dietary DM. Cows were assigned to 1 of 4 dietary treatments. The fat supplementation started at 28 days prior to parturition, at the day of calving, at 28 days postpartum, or not at all. Cows stayed on diets through 100 DIM. Initiating fat supplementation during the prepartum period appeared to have several advantages. These cows tended to produce more milk than the cows started on fat after calving (93.0 vs. 81.8 lb of milk per day). In addition, only 1 out of 12 cows fed fat prepartum had a disease (mastitis, metritis, or retained fetal membranes) compared to 15 out of 35 cows not fed fat prepartum. A timed AI protocol was starting at 71 days in milk. First service conception rate of cows fed the fat, regardless of when the fat supplementation started, was better compared to cows not fed fat at all (58 versus 27%). Although this study only used 47 cows, the increase in conception rate was large enough to detect a significant benefit for the fat-fed group.

In a second study using 1069 Holstein cows on a commercial dairy farm in Florida, the feeding of different fat sources was compared. From approximately 14 days prepartum through approximately 30 days postpartum while in the fresh group, cows were fed either a calcium salt of palm oil (Energ-II) or a calcium salt of safflower oil enriched in linoleic acid.

When cows left the fresh group, they were fed either the calcium salt of palm oil or a calcium salt of fish oil (Strata-G). The fat supplements were fed at 1.5% of the dietary dry matter and were supplied by Virtus Nutrition. Due to management and facility limitations, we did not have a group of cows not fed fat. Cows went through a timed AI protocol with the first breeding occurring at approximately 83 days in milk and a second AI made 35 days later if needed. Based upon an accumulated pregnancy diagnosis at 60 days including both inseminations, cows fed the calcium salt of fish oil after 30 days in milk had the better pregnancy rate of 52.8% compared to the 45.5% for those fed the other fat source. This improvement was due to a lower loss of embryos between pregnancy diagnosis at 32 and 60 days post AI for the cows fed fish oil, a good source of omega-3 fatty acids. Embryo loss was 6.3% for the cows fed fish oil compared to 13.6% for the other cows.

MILK QUALITY – HIGH BACTERIA COUNTS

David R. Bray

The time of whatever is legal is OK is ending. Our processors are demanding more quality and not necessarily paying for that quality. While this may not seem fair, that's the way it is. Producing milk with low Standard Plate Count (SPC) is quite easy and just takes attention to details. Bacteria counts are a function of three things: cleaning, cooling, and cows, and usually in that order.

Cleaning: Cleaning a milking system should be simple. Just do it the same way every milking. This works real well if the same people do it every milking, but in most cases this is not the case; help changes, chemicals change, things wear out or quit working and the changing help does not know that. If you can't speak the same language as your help, it's hard to make changes, what can change:

1- Bought new cleaning chemicals, this is a better buy, $50 less a drum, only instead it calls for 1 ounce of chemical per gallon of water and the old chemical called for 1 ounce per 5 gallons of water, so you need 60 ounces rather than 12 ounces. And to make things worse the guy who delivered this did not leave any instructions on the wall on how much chemical to use, the sales person should be flogged. You must use the correct concentrations of soap, acid and sanitizers.
2- Do you know how much water your wash sink holds when full? Most old half round long sinks hold about a gallon per linear inch, a 60" sink holds about 60 gallons to the fill line, do you have to add extra water to the sink so it does not go dry, and that water must be accounted for also. Does anyone know how much water is added to the bulk tank wash cycles? And how do you add two little bottles of soap to the tank washer?
3- Hot water is necessary to clean a system, not to rinse a system. If you can get a good rinse with cold tap water you will save energy. If you have a 50 gallon hot water heater, a 60 gallon pipeline wash sink and need 100 gallons of hot water to wash the bulk tank, you better stage your procedures. At least 160° water is needed to start the soap wash–up and the solution should be dumped when the temperature drops to 120°, acid rinse can use tap water.
4- Sanitization cycle using chlorine should be done 30 minutes or less before the start of milking. For the pipeline and bulk tank, some acid rinse\ sanitizers can be used at longer intervals. Be sure to follow the directions on all chemicals.
5- The air injector is an important part of the wash up system and needs to be adjusted to get the proper slugging to clean the system; this seems to be a common play toy for the help so inspection is often needed.

High bacteria counts often mean that it is time to change all milk hoses, wash up hoses, jetter cups. All rubber and plastic hoses should be replaced every six months. Silicone hoses should be replaced according to directions. The milk pump may need to be dissembled and cleaned, the main vacuum and pulsation lines should be flushed. If all else fails take apart the plate cooler and clean it and reassemble with new gaskets. The positive side of the system, from the milk pump to the tank is the hardest part of the system to clean because it does not get the slugging action of the vacuum side.

Cooling: Make sure you follow the directions for the particular tank for when to start the tank before the milking process. Most dairies have some sort of pre coolers for the milk anyway. It is important to keep the outside cooling fins free of dust and dirt to get proper cooling. Low coolant is also a major cause of warm milk.

Cows: If you have an elevated Somatic Cell Count (SCC) you can have a high bacteria count also, but this is not necessarily true. Strep uberis infected cows may shed high numbers of bacteria and several cows can elevate the SPC. A cow with a problem should be handled like a high SCC cow. Find your high cows and deal with them.

To learn more, contact Dave Bray at drbray@ufl.edu or call (352) 392-5594.

WATCH YOUR FEED ECONOMICS CLOSELY IN 2008

Russ Giesy, Lane Ely, Mary Sowerby, and Albert De Vries

Feeding cattle will be more expensive in 2008. The price of corn might reach $4.75 per bushel. Some economists predict less corn planting as acreage is diverted to wheat, soybeans and cotton which are in demand. Additionally, new ethanol plants are expected to increase production

from 7 to 11 billion gallons. The corn needed to feed that capacity will grow from 2.5 billion to 4.5 billion bushels during 2008. This demand will likely keep feed commodity prices strong throughout 2008.

Feeding cows is an important business. Dairy farms that participated in the Dairy Business Analysis Project (DBAP) in 2006 paid an average of $7.40 per cwt. for purchased feed plus cropping costs. That sum represented 38% of total revenues. Of that expenditure, DBAP estimated that $6.52 per cwt. was spent to feed the adult cow herd while the remainder was spent to feed herd replacements.

Analysis of DBAP data suggests that there continue to be opportunities to use feed inputs more efficiently. While the average feed cost for adult cows was $6.52, the range among DBAP participating dairy farms was from less than $5.00 to greater than $9.00 per cwt.

Feeding management continues to be critical to the financial success of Florida dairy businesses. The top six most profitable dairy farms in DBAP in 2006 (out of 22 farms) averaged $5.28 per cwt. to feed the adult cows. This group of dairy farms averaged $3.51 net farm income per cwt. while the average of all dairy farms was $0.81 per cwt. Florida dairy producers may need to find opportunities to utilize feedstuffs more economically in 2008 as most feed commodity prices continue to move upward. *(Russ Giesy and Mary Sowerby are with UF/IFAS Dairy Extension, Lane Ely is with the University of Georgia, Albert De Vries is with UF/IFAS Department of Animal Sciences. The DBAP website is http://dairy.ifas.ufl.edu/dbap).*

RECORDS THAT ARE USED THE MOST, MEAN THE MOST!

Daniel W. Webb

This slogan has been used by DHIA personnel and records' analysts to stimulate herd managers to be more enthusiastic about using records. We hear questions from dairymen like "How do I use all this information?" We have talked to a number of successful dairymen and good consultants and found a few questions which DHIA can help answer. The following comparison of two herds provides an example.

How is my herd doing? The DHI202 herd summary showed the following for herd A: 1) rolling herd average 23,641 lbs valued at $4,981 per cow; 2) milking cows average 70 lbs on current test day at 181 days in milk; 3) peak milk for all cows averaged 95 lbs; 4) annual herd turnover 33%; 5) cows died were 7%. Herd B's data showed: 1) rolling herd average of 17,743 lbs valued at $3,587 per cow; 2) milking cows averaged 53 lbs at 182 days in milk; 3) peak milk was 74 lbs; 4) annual herd turnover, 39% and 5) cow death loss 13%.

What about calf survival? Herd A had 92% of calves born alive with 48% female. Herd B had 93% calves born alive with 44% female. Both herds had 1% difficult births.

How do first-calf heifers perform? Start-up milk for first-calf heifers in Herd A was 66 lbs per cow with peak milk at 78 lbs and 25 % were culled in the first lactation; Herd B's first lactation cows had 51 lbs at start-up and 66 lbs at peak and 26% were culled.

How does reproductive performance compare? Herd A had 87 days to 1st service, 32% successful 1st-services, 13 % annual pregnancy rate and 13.9 month actual calving interval. Herd B had 74 days to 1st service, 13% successful 1st-services, 8% annual pregnancy rate and 15.0 month actual calving interval...

What about milk quality? Herd A's weighted average SCC of 283,000, 74% of cows below 250,000, first-lactation cows average SCC = 251,000 and 7% of herd over 1 million. Herd B's weighted average SCC = 560,000; 64% below 250,000, first-lactation cows average SCC=455,000 and 14% of herd over 1 million.

Herd records, by themselves, only provide statistics. The use of herd records offers the opportunity for management to zero in on aspects of herd performance that can be improved to increase the bottom line. So, to paraphrase the title, "Records that are not used, mean nothing!"

SECOND SOUTHERN REGIONAL DAIRY CHALLENGE AGAIN A SUCCESS

Albert De Vries

On Nov. 15-17, 2007, 48 students from 11 Southern colleges and universities participated in the second annual Southern Regional Dairy Challenge held in Baton Rouge, La. Louisiana State University (LSU) staff and students hosted coaches and students from Berry College, University of Kentucky, Alabama A&M University, Louisiana State University, Virginia Tech, North Carolina State University (NCSU), Clemson University, Oklahoma State University, Southern University A&M, Louisiana Tech University, and the University of Florida.

The Southern Regional Dairy Challenge is an innovative three-day event designed by a team of industry and university professionals. Working in mixed-university teams of five or six students, contestants assessed all aspects of a working dairy farm and presented recommendations for improvement to a panel of professional judges.

The objective of this evaluation process is to create a real-life situation that stresses the importance of teamwork and professionalism. Contest Chairperson Gary Hay of LSU stated, "The Dairy Challenge allows students to take the technical knowledge they have gained and apply it to real life. It's a great way to enhance students' team-building and communication skills, as well as their technical and observation skills."

Participating dairy farmer Ladd Blades, Blades Dairy Farm of Kentwood, La., welcomed the opportunity to help teach students and get feedback from many sets of eyes that gave him new perspectives on his dairy farming practices.

The Dairy Challenge ended with dinner and an awards ceremony. Paul Humes, director of the School of Animal Sciences, offered a greeting to the students. "I am truly impressed with the educational value of Dairy Challenge in developing teamwork, as well as improving the critical evaluation and decision-making skills that will serve you well in your careers." After completing the event, NCSU student Katie Jackson said, "I had an amazing time and gained so much from the experience."

The Florida participants at the 2nd Southern Regional Dairy Challenge in Baton Rouge, LA. From left, Kyle Johnson, Diane Tearney, Albert De Vries (coach and chair of the organizing committee), Catalina Echeverri, Will Cone, and Phil Lawrence.

A major sponsor was Florida-based Dairy Production Systems in High Springs. Other Florida-based sponsors were the Woody Larson family and Southeast DHIA. Many other sponsors in the South and nationally contributed to the event. In addition, Southeast Milk, Inc. awarded lifetime memberships in the National Dairy Shrine to all participants in the 2007 contest. National Dairy Shrine preserves the heritage of the dairy industry and provides awards and scholarships for a bright future for the dairy industry.

North Carolina State University will host the third Southern Regional Dairy Challenge in November 2008. If you have questions about the Dairy Challenge, contact Albert De Vries at devries@ufl.edu.

The Southern Regional Dairy Challenge is under the guidance and support of the North American Intercollegiate Dairy Challenge, which was established in April 2002, as a management contest to incorporate evaluation of all aspects of a specific dairy business. For more information, call (217) 485-3441 or visit http://www.dairychallenge.org.

UPCOMING DAIRY MEETINGS

For registration information, agendas and other meeting details, visit the Florida Dairy Extension site at http://dairy.ifas.ufl.edu or contact Albert De Vries, devries@ufl.edu, (352) 505-8081.

- The **19th Florida Ruminant Nutrition Symposium** will be held **January 29 - 30, 2008** at the Best Western Gateway Grand located at 4200 NW 97th Blvd. in Gainesville, Florida. For more information contact Charles Staples, chasstap@ufl.edu, (352) 392-1958.

- The **34th Southern Dairy Conference** is planned for **January 30 - 31, 2008**, in Atlanta, GA. The Southern Dairy Conference focuses on milk marketing issues in the South. Contact Dan Webb, dwwebb@ufl.edu, (352) 392-5592.

- The **4th Florida and Georgia Dairy Road Show** is scheduled for **March 4 - 7, 2008.** Locations are Okeechobee, FL (4th), Mayo, FL (5th), Madison, GA (6th) and Tifton, GA (7th). Goal is again to bring practical information about dairy reproduction, feeding management, cow comfort, facilities, and health. For more information, contact Brent Broaddus (broaddus@ufl.edu, (813) 744-5519 ext 132), Albert De Vries (devries@ufl.edu, (352) 392-5594), or John Bernard (jbernard@uga.edu, (229) 391-6856).

- The **45th Florida Dairy Production Conference** is scheduled for Tuesday **April 29, 2008**. Location will again be the Hilton University of Florida Conference Center in Gainesville, FL. New this year is an **Open House at the Dairy Research Center** in Alachua on Wednesday morning **April 30**. Come and see what is going on at the DRU. Contact Albert De Vries (devries@ufl.edu, (352) 392-5594.

Dairy Update is published quarterly by the Department of Animal Sciences, University of Florida, as an educational and informational service. Please address any questions or comments to Albert De Vries, Editor, Dairy Update, PO Box 110910, Gainesville, FL 32611-0910. Phone: (352) 392-5594. E-mail: devries@ufl.edu. Past issues are posted on the UF/IFAS Florida Dairy Extension website at http://dairy.ifas.ufl.edu. This issue was published on **January 15, 2008.**