

Texas Dairy Matters

Newsletter



Editor: Texas AgriLife Extension
Service - Dairy Team

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Greenhouse Gas Reporting on Hold

The Environmental Protection Agency (EPA) signed a final rule requiring reporting of greenhouse gas (GHG) emissions from large sources and suppliers. The requirement mandated that facilities that emit 25,000 metric tons or more of CO₂ equivalent gases per year submit annual reports to EPA. This required dairies with 3,200 cows or more to determine if their operation were required to report various emissions. Although this rule was proposed to go into effect on Dec. 29th, a recent amendment to the Department of Interior/EPA 2010 Appropriations Bill abolished funding for the implementation of any rule mandating the reporting of GHG from manure management systems. Another amendment will prevent EPA from implementing any regulation of GHG emissions under Title V of the Clean Air Act (also known as the “cow tax”). These amendments remain in effect for at least one year. Other sources besides manure management systems are still required to report their GHG emissions for 2010.

US Dairymen Agreed to Cut GHG Emissions

In Copenhagen, Denmark at the energy summit, Agriculture Secretary Tom Vilsack and U.S. dairy producers signed a historic agreement to cut greenhouse gas (GHG) emissions by 25% by the year 2020. The Memorandum of Understanding is promised to promote innovative steps to turn dairy waste into electricity and reduce GHG emissions. The agreement represents unique public/private partnership and is another demonstration of the Obama Administration’s commitment to curb the emissions of GHG. The Memorandum of Understanding was agreed upon by the Innovation Center for U.S. Dairy – part of the Dairy Management Inc. – the USDA and U.S. dairy producers to work together to achieve the goal of a 25% reduction in GHG emissions. The USDA will do so by undertaking research initiatives, allowing implementation flexibility, and enhancing marketing efforts of anaerobic digesters to dairy producers.

(Source: USDA News Release No. 0613.09.)

Panhandle Issues

Texas AgriLife Extension Service recently surveyed dairy producers in the Panhandle area in order to better understand possible issues to enhance service to the dairy producers in this area, which account for almost 50% of the dairy cows in Texas.

The survey was taken between May and June 2009 by Extension Associates and county agents in 8 counties containing the largest dairy operation concentrations in the Texas Panhandle. The counties included were: Bailey, Castro, Dallam, Deaf Smith, Hale, Hartley, Moore and Parmer County.

Dairy producers were asked about particular issues faced in this region and were asked to rate the topics presented to them on a scale from 1 to 5; one being of minor importance and five being of major importance. They were also given the opportunity to comment on specific topics they were facing for each issue. The results were tallied and the average for each issue was calculated and displayed in figure 1.

A total of 38 dairies representing approximately 110,000 dairy cows were included in the survey.

Based on the responses to this survey, water and labor are the two major issues faced by dairy producers. Further topics within the water issues area included concerns for future regulation of water usage, the quantity of water available for use, and also the water quality in the Dockum/Santa Rosa aquifer.

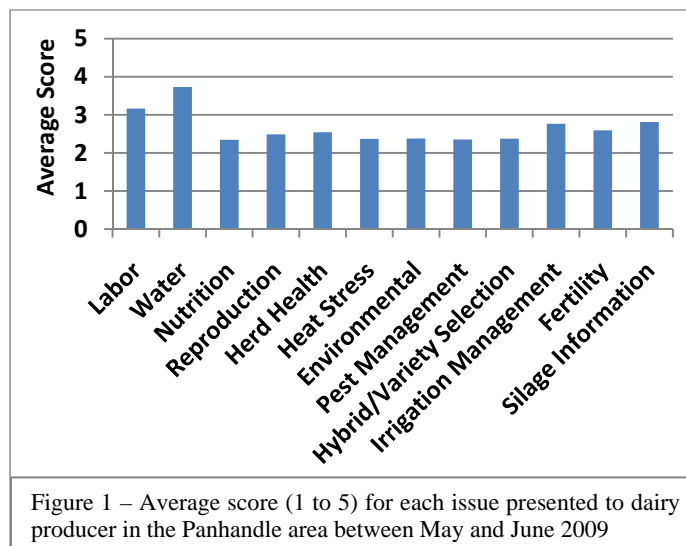


Figure 1 – Average score (1 to 5) for each issue presented to dairy producer in the Panhandle area between May and June 2009

Water and irrigation management go hand in hand as managing center pivot irrigation for crop quality was also a concern for some producers.

Labor was shown to be second in importance, but revealed a much longer and more diverse list when compared to the relatively short list for water. Specific issues under the labor category that producers are facing include: employee training (cow and calf care, machine maintenance, preparedness for seasonal weather changes and health and food safety), laws (agriculture jobs bill and documentation of workers, including the I-9 form), competition for quality employees, personnel listings (service providers), employee retention, and difficulties in filling milker positions.

Work is already underway to address the top issues. Research has begun in an effort to quantify actual water usage on dairy operations. Also, efforts to assist with center pivot management by monitoring water usage for improved efficiency of water application on cropland have begun.

Labor issues are also being addressed. Work has begun to build modules for training employees in animal handling, proper injection-site placement, recognizing calving difficulty and farm biosecurity. Also a pilot program has begun to address employee training and retention and provide educational programs to prepare in-

Dairy farming operations are being pushed out of Southern California by urban sprawl. Many are relocating to the Panhandle, boosting the Texas Economy by \$2 billion annually

Cooperatives Working Together has generated a return on investment of \$1.54/cwt in 2009

Agriculture Secretary Tom Vilsack announced the new Dairy Economic Loss Assistance Payment (DELAP) program which authorized \$290 million for loss assistance payments to eligible dairy producers

Panhandle Issues cont.

-dividuals to enter the workforce. Additionally efforts are underway to assist workers and their families integrate into the community. The programs dealing with labor issues are designed to minimize language being a barrier to the transfer of knowledge.

We are grateful to the producers who completed this survey, thus allowing us to identify what additional resources are needed. With this data we will be better able to address the issues producers face.

★★★★★★★★★★
 Next dairy producer meeting in the Texas Panhandle will be scheduled February. County Extension Agents will contact producers with more details.

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Don't miss it:
Southwest Dairy Day will be held in the Texas Panhandle in May 2010. More details will be in the next issue of the Texas Dairy Matters Newsletter.

Dairy Environmental Stewardship

For a number of years, there has been increasing environmental scrutiny on animal agriculture. In the past, the dairy focus had been on the Bosque Watershed; however the smaller dairy operations in East Texas and the Winthorst area have come under increasing surveillance in recent months. To address these issues the Dairy Team has been involved in several major efforts to increase compliance with the environmental regulations in an effort to improve environmental stewardship. These efforts targeted not only the producers, but the technical service providers and regulatory personnel.

The *Environmental Compliance Calendar* developed in conjunction with the Texas Association of Dairymen was updated and sent to EPA and TCEQ for review. Both agencies had a very positive response to the calendar and indicated it was a tool for dairy producers in the field and a simplified record keeping. If you didn't receive a calendar in the mail, contact the Texas Association of Dairymen (817-410-4540) and they'll send you one.

Log on to <http://texasdairymatters.org> to subscribe to the quarterly TDM newsletter





Improve Estrous Detection - Reduce Costs

Todd Bilby, PhD

Texas AgriLife Research and Extension Service – Stephenville, TX

Failure to detect estrus (or heat) is one of the most common and costly problems that limits success in reproductive programs. Approximately, half of all estruses are undetected. In addition, up to 15 % of dairy cattle presented for insemination are not in estrus. Failure to detect cows in estrus and breeding cows not in estrus, results in significant economic losses.

As dairy herds have increased in size, adequate time to visually observe cows for estrus has been reduced. In addition, increased milk production and insecure footing, on concrete instead of dirt, has reduced the time and length of estrous expression (Table 1).

Since the development of synchronization programs for timed artificial insemination (TAI), more and more dairies utilize a TAI protocol (i.e. Ovsynch, CoSynch-72) in conjunction with estrous detection. Many dairies start with a series of prostaglandin treatments (i.e. Presynchronization) prior to beginning a TAI protocol. Approximately, 83 % of cows show estrus within 2 – 6 days following the second prostaglandin treatment, if the first treatment was used as a “set-up” shot and cows were not bred. Cows not bred following the prostaglandins, begin the TAI protocol.

Estrous expression is reduced due to the GnRH within a TAI proto-

-col. Even though prostaglandin treatments improve the synchrony at which cows show estrus, take steps to improve the number of cows observed and inseminated at estrus. By improving estrous detection and the number of cows inseminated following prostaglandins, the number of cows entering the TAI protocol is significantly reduced. This reduces the number of treatments administered, significantly reducing costs.

A TAI program is important for insuring all cows are inseminated by a certain time after calving, treating anovular conditions, and breeding cows not caught in estrus prior to the TAI program. When possible, it is still advantageous to breed cows following detected estrus.

Several estrous detection aids (tail chalk, heat mount patches, pedometers, etc.) exist that improve the accuracy and number of cows detected in estrus. For further improvements, use a combination of two or more methods and follow these tips:

1. Utilize visual observations and tail chalk as a fairly cheap and easy way to improve estrous detection. Schedule visual observation at least 2 to 3 times per day for 20 minutes each, preferably early in the morning and late in the evening.

- 2) Check herd records to see when the cow was last in estrus to verify accuracy of estrous detection. Keep in mind sometimes the cow doing the mounting is the cow in estrus.
- 3) Observe secondary signs as another aid in accurately identifying cows in estrus.
- 4) Be as aggressive as possible with identifying cows in estrus, particularly when estrous expression is reduced in the summer or when cows spend the majority of their time on concrete (i.e. freestall vs. open dry-lot).
- 5) Combine estrous detection technology with judicious management and interpretation by knowledgeable cow people. The tested and proven “eyeball” technique requires time. No matter the technique, success of estrous detection programs depends upon dedicated, observant people. Never use estrous detection aides and TAI programs as a crutch, but as a tool.

About 10% of the reason for estrous detection failure can be attributed to cow problems and 90% to “management” problems. Improve your estrous detection efficiency to improve your bottom line.

Table 1. Estrous activity on dirt versus concrete surfaces (Source: Britt et al., 1986).

	Dirt	Concrete
Duration of estrus (hrs)	13.8	9.4
Total Mounts	7.0	3.2
Total Stands	6.3	2.9

This article is part of our TDM fact sheet series (Nov 2009) and can also be viewed at <http://texasdairymatters.org>



Re-evaluate Reproduction

Ellen Jordan, PhD, ACAN
Texas AgriLife Extension Service – Dallas, TX

Over the last several decades, fertility of dairy cows has declined. A recent study by the Animal Improvement Program Laboratory (AIPL) indicates the historical decline stopped and conception rates, days to last breeding, and calving interval have actually started to improve.

The AIPL study, based on Dairy Herd Improvement (DHI) data, provides national and regional averages for a number of reproductive parameters. These numbers provide producers an opportunity to compare their herd's performance to the average and to set new goals. For this analysis, Texas herds are considered part of the Southeast region, while New Mexico herds are categorized as Southwest.

Several factors may contribute to the improvement in reproduction. From a genetic perspective, productive life (PL) was added to genetic evaluations in 1994 and daughter pregnancy rate (DPR) was added in 2003. These two additions allowed selection for improved fertility.

On the management side, one very significant change that has occurred is the development of synchronization programs. Nationally, 17% of herds are definitely or probably synchronized, while 10% of Southeast and 17% of Southwest herds adopted synchronization programs according to the AIPL study. The Southeast has the lowest adoption rate of any region in the nation.

As might be expected, the adoption of synchronization appears greater on first service. In 2006, just over 1 million breeding records were available to calculate days to first breeding. Of those, approximately 51% were not synchronized, 9% were possibly synchronized, 33% were probably synchronized and 7% were definitely synchronized.

For Holsteins, the average days to first breeding has improved from 92 days in 1996 to 85 days in 2007. The trend for Jerseys isn't as well-defined, but went from 85 days in 1996 to a peak of 88 days in 1998 and 1999, to 83 days in 2007.

On a national basis initially, the conception rate for first breeding and all breedings declined by 7 percentage points, but improvement during recent years has occurred. In 2006, the mean conception rate for first breeding was 31% nationally; while it was only 26% in the Southeast, but 33% in the Southwest.

As would be expected with a declining conception rate, the actual number of breedings required to obtain a pregnancy increased. Nationally, on average 2.5 breedings are required to obtain a pregnancy. In the Southeast, 2.7 breedings are needed, while only 2.4 are used in the Southwest.

The actual calving interval for Holsteins peaked at 428 days in 2001, and has since fallen to 422 days in 2006, which is still 12 days longer than it was in 1996. The average calving interval for Jerseys was 398 days in 1996. It spiked to a 415 day average in 1999 and had

fallen to 410 days by 2006.

Pregnancy rate (PR) was calculated by AIPL based on days open as: $PR = 100 (0.25)$ (233-days open). The days open was limited to include only animals with 50-250 days open; therefore may be higher than reported by record keeping systems that do not exclude animals with extended days open. Nationally, the pregnancy rate was 24.9%, while the Southeast average of 22.2% was lower and the Southwest (28.3%) was higher than average.

Take time to evaluate whether you too are seeing improvements in herd fertility. If not, consider whether you have adopted the genetic and management tools now available to improve herd reproduction. Work with your consultants to determine how to incorporate these technologies into your herd. Finally, re-define your goals to be "above average".



Breeder Cart - Jer-Z-Boys Dairy



Nutritional Management of the Dry Cow

Ralph G. S. Bruno, DVM, MPVM
Texas AgriLife Extension Service – Canyon, TX

The dry period is as important to the life of a cow as any period during lactation. Proper management and nutrition while dry is crucial for obtaining maximum milk production in the following lactation. The transition from lactating to dry and dry to lactating is marked by significant physical and metabolic stresses. Cows experiencing excessive stress prior to calving are more susceptible to:

1. Metabolic (ketosis, milk fever, fatty liver, etc.) and digestive problems;
2. Decreased dry matter intake;
3. Reduced milk production;
4. Lower lactation peaks;
5. Reproductive failure;
6. Postpartum reproductive diseases; and
7. Involuntary culling.

The main goal of the dry period is to provide some resting time for the cow. During this period the mammary gland tissue regenerates and mineral body reserves are replenished before the next lactation begins. The dry period has two main phases with different nutritional requirements:

- **Far-off** period (from the day of dry off until three weeks before the expected calving date);
- **Close-up** period (last three weeks prior to the expected calving date).

During the far-off period the main focus is mammary gland involution. Feed a low energy diet during this period to promote less milk synthesis by the mammary gland, consequently minimizing the risk of mastitis. In addition, formulate far-off diets to provide the required amount of minerals and vitamins, limiting energy and protein to avoid over conditioned cows; which increases the odds of metabolic diseases after calving.

The goals in the close-up period consist of:

1. Adapting the rumen microflora and rumen papillae to the feedstuffs being fed to milking cows;
2. Maintaining normal calcium levels; and
3. Minimizing negative energy balance and immunosuppression around calving.

Increased energy density during the close-up period is required to meet the needs of the rapidly growing fetus. This energy increase also helps to minimize any late gestation weight loss that the cow may experience in response to increased fetal growth.

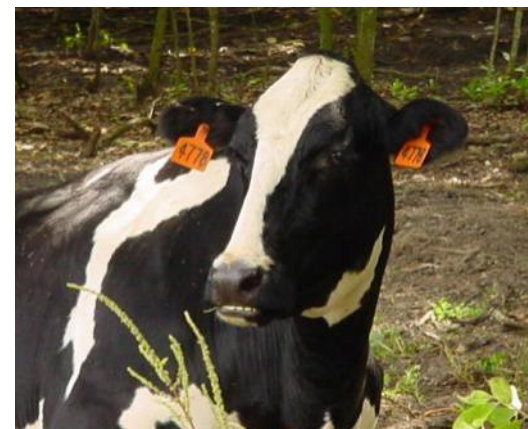
Anionic salts are commonly used in the close-up diets to prevent milk fever (hypocalcemia). Use anionic salts to shift the dietary cation-anion difference towards a more negative charge promotes the release of calcium from tissues.

Keep in mind that anionic salts are unpalatable and may lead to decreased dry matter intake if not managed properly. Evaluate the success of anionic salts by evaluating urine pH once or twice per week. In Holstein cows, urine pH between 5.8 and 6.8 indicates effectiveness of the diet. In Jersey cows the optimum pH is between 5.5 and 6.5.

Keep the yearly incidence rate of these undesirable diseases at low levels:

- Milk fever, < 3%;
- Displaced abomasums, < 5%;
- Retained placenta, < 8%; and
- Ketosis, < 3%.

In summary, the dry period is both the end of one lactation and the beginning of the next. Careful attention to management and feeding for animals is crucial to achieving optimum animal performance with minimal health problems and increased productive and reproductive efficiency during the following lactation.



Manure Conference

In September the Texas Animal Manure Management Issues symposium was held in Round Rock as a multi-species event. The dairy specialists worked collaboratively with the Biological and Agricultural Engineering faculty who chaired the event. Dr. Jordan edited the conference's proceedings which will continue to be a resource for the agriculture community. Dr. Saqib Mukhtar presented: "Mortality Management," and Dr. Daren Harmel, USDA-ARS presented: "The Impact of Proper Organic Fertilizer Management in Production Agriculture".

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DOPA Seminar

On October 27, the annual East Texas Dairy Outreach Program Area seminar was taught at the Southwest Dairy Museum, Sulphur Springs. Representatives from Texas Association of Dairymen, TCEQ, and EPA participated in the program coordinated by Dr. Bilby, which included a presentation on cooling ponds by Dr. Jordan. On the exit survey, half of the participants indicated they were going to take action regarding their environmental compliance when they returned to their farms and less than 17% did not plan to make changes based on the information presented.

SW Regional Dairy Center

Construction has moved forward on the Southwest Regional Dairy Center (SWRDC) located in Stephenville, Texas. The mission of the SWRDC is to provide enabling infrastructure support for teaching, research, and extension programs to meet the needs of higher education, the dairy industry and society in Texas and the Southwest.

Construction is scheduled to be completed in May of 2010. This will be the only dairy center of its kind in the Southwest with housing accommodations for 300 cows in an open-freestall barn with the hopes of building a second 300 cow barn in the near future. Overall the dairy will be able to milk 600 cows. Within this facility there is a 24 slots carousel rotary parlor, laboratories, 50 person classroom, and offices. To learn more visit the SWRDC website at: <http://www.tarleton.edu/dairycenter/index.html>.

*The Dairy Team welcomes
Extension's new county agent
for Dallam/Hartley counties
Mr. Michael Brag.
The Dairy Team wishes him
the best and looks forward to
working together.*

Economic Impact of Irrigation

Recently, an analysis was completed to measure the economic impact of crop irrigation in the Texas Panhandle and was discussed in early December at the Texas Commodity Symposium in conjunction with the Amarillo Farm and Ranch Show. Irrigation of crops was shown to contribute over \$1.6 billion a year and over 16,000 jobs to the economy in the 26 counties surrounding Amarillo. Further analysis demonstrated that the direct \$870 million economic impact of irrigated corn, cotton, sorghum, and wheat would be cut to under \$200 million if irrigated acres of cotton, sorghum, and wheat were converted to dry land farming practices.

Water plays a key role in the economy of the Texas Panhandle and will continue to play a role as long as the supply will last. Annual measurements to determine depth to water are currently being conducted to measure changes in water levels from year to year. Groundwater management areas have already or are in the process of setting the desired future conditions of the aquifer in their areas. These actions are being undertaken to ensure water will be available for irrigation in the future because of the vital role it plays in the economy of the Texas Panhandle and the livelihood of the area's agriculture producers.



People from the Texas Dairy Industry



Nich Kenny

Kenny is Texas AgriLife Extension irrigation specialist based out of the Amarillo center. His work focus is agricultural irrigation efficiency, including crop water use (ET), pumping plant efficiency and irrigation application efficiency and timing. At our last dairy producer meeting (Oct. 2009), Nich updated dairy producers on water issue.



Dr. Brent Bean

Bean has an AgriLife Research and Extension appointment and is based at the Amarillo center. His extension work focuses on grain crop production issues and his research is on weed control in sorghum, wheat, soybeans, corn, and sunflowers. Also he works on sorghum silage involving dual-purpose, photoperiod sensitive, male sterile and brown mid-rib types.

You can ask a question of the Dairy Team at:
texasdairymatters@ag.tamu.edu

Texas AgriLife Extension Dairy Team

The Dairy Team wishes all dairy producer and allied dairy industry a wonderful 2010 full of joy and success!



Todd Bilby, PhD



Ralph Bruno, DVM



Ellen Jordan, PhD



Kevin Lager, MS

Save the dates:

Jan. 25 - 26, 2010 - Dairy Grazing Systems in Texas - Potentials and Pitfalls Meeting, 11 am – 1:30 pm, Jan. 25 in Winthorst, TX and Jan. 26 in Stephenville, TX – <http://texasdairymatters.org>

Jan 31 – Feb 3, 2010 - 49th National Mastitis Council Meeting - Albuquerque, NM - <http://www.nmconline.org>

Feb. 3, 2010 – Silage Conference, Comanche County, – <http://texasdairymatters.org>

Feb. 18, 2010 – TANC Meeting, Stephenville, TX, – <http://texasdairymatters.org>

Feb 24, 2010 – East Texas Forage Conference – Emory, Raines County - www.texasdairymatter.org

Mar 2 - 4, 2010 – Hoof Trimming School – Hopkins County – <http://texasdairymatters.org>

March 10-12, 2010 – High Plains Dairy Conference – Amarillo, TX – www.highplainsdairy.org

April 12 - 13, 2010 – Mid-South Ruminant Nutrition Conference – Arlington, TX – www.txanc.org

For other event dates log on to <http://texasdairymatters.org>

Texas Dairy Matters Newsletter is produced by the Dairy Team of Texas AgriLife Extension Service / Texas A&M System. Ralph Bruno, WTAMU Box 60998, Canyon, TX – 79016; Phone(806) 651-2620; Fax: (806) 651-2504; rbruno@ag.tamu.edu; Todd Bilby, trbilby@ag.tamu.edu; Ellen Jordan, e-jordan2@tamu.edu; Kevin Lager, kjlager@ag.tamu.edu. Fact sheets are based on peer reviewed research and edited by the Dairy Team.