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The Texas A&M University System

in this issue...	Vol. 21, No. 1. March, 1998
Alternative Strategies to Dairy Waste...	1
PC-based "Official" DHI Records.....	2
New List Server	4
DHI - Open Border.....	5
FeedSTOR - What are your Feed ...	5
Information for Dairy and Beef ...	6
East Texas Dairy ...	7
TX Dairy Producers....	7
Calendar.....	8

Government Publications
Texas State Documents

JUN 17 1998

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Alternative Strategies to Dairy Waste Management for Texas Dairy Producers

Sandra Stokes, Extension Dairy Specialist

Runoff of nutrients from the manure of dairy herds to groundwater and surface water has been a source of concern in many states in the U.S. Texas is no exception. Nutrient losses to ground and surface waters from manure storage can affect water quality dramatically. Lately, the widely publicized concerns focus on surface runoff containing high levels of phosphorus, because it may enter lakes and contribute to algae blooms. Producers in Central Texas have come under scrutiny recently for water quality concerns regarding Lake Waco. All Texas dairy producers with more than 250 cows are required by the State to implement and maintain pollution prevention plans. Dairy operations are inspected annually for adherence to their waste management plans and violations of these plans.

A well-managed total nutrient management plan would reduce purchased nutrient inputs, improve nutrient recycling in a given area, and decrease nutrient losses into environmentally-sensitive areas. To implement such a system would require appraising the amount and nutrient content of manure produced, complementing crops to soil conditions, estimating the requirements of these crops, and accountability of the surplus/deficit for each nutrient. While several of these are presently

considered by commercial dairy producers, this information is not often compiled and integrated for an accurate picture of the whole operation.

Nutrients can accumulate in concentrated livestock areas when nutrients imported (feed, fertilizer) are greater than nutrients exported (milk, meat, crops). Presently, several states have developed budgets for application of manure on cropland. In New York, when rations are changed to improve efficiency, these systems show a reduction of up to one-third in manure nitrogen content. Nutrient budgets also have been developed in Florida to plan for long-term nutrient disposal.

The concept of whole farm nutrient management through budgets integrates many aspects of commercial livestock operations. Nutrient inputs include those purchased in the form of feed, fertilizer or animals. Nutrient outputs are exported away from the farm as crops, fertilizer, animals, and/or milk. The difference between the two estimates nutrient retention on the farm. Nutrients remain on the farm in several forms - crops to be incorporated back into the animal feeding system or land-applied animal waste.

Educational programs conducted by the Texas Agricultural Extension Service serve people of all ages regardless of socioeconomic level, race, color, sex, religion, handicap or national origin.

Current calculations of nitrogen balance document exports (in the form of meat, milk, and crops), often less than one-third of the nitrogen imported into the system. The total amount of nitrogen produced annually on a dairy farm is usually not fully recognized until calculated. A high-producing cow fed according to NRC crude protein standards excretes approximately 260 pounds of nitrogen per year. A diet altered to contain minimum protein requirements may reduce nitrogen excretion as much as 14%, suggesting potential for considerable influence over manure nitrogen content. Excretion levels can be affected by differing voluntary feed intake, ration quality and milk composition.

Forage production systems in Texas have revolved around choosing complementary warm-season and cool-season species for efficient nutrient uptake throughout the entire year. By choosing complementary winter annuals, soil nutrient uptake continues during cool weather.

Many species of southern forages have been evaluated for their agronomic capabilities, but little data exists regarding their potential in the dairy ration. Typically, southern forages have lower crude protein levels, higher fiber levels, greater lignification and lower digestibilities than those grown in the Midwest and Northeast. As southern forage characteristics are better defined, feeding practices can be refined to increase the digestive efficiency of the animal. Manipulating digestive efficiency has the potential to influence manure nutrient content. The benefits would be two-fold:

- increased production efficiency for the dairy producer (reducing cost of producing milk) and
- decreased nutrients excreted into the environment, protecting water supplies.

This information was presented in part by Dr. Jack Van Horn, Extension Dairy Specialist at the University of Florida, in an Extension training program on waste management.

They're Finally Here. PC-based Official DHI Records

Michael Tomaszewski, Extension Dairy Specialist

When DHI started in 1905, data was collected and processed at the dairy. Ninety years later, we can do the same thing. Texas DHIA, realizing the advantages of PC-based processing, has worked aggressively to develop the concept of on-farm processing. A product they developed, DairySTOR allows this to happen. The importance of this concept is not the processing but the ability to access/integrate the on-farm database. Timely access facilitates up-to-the-second decisions made with up-to-the-second management information.

DairySTOR has received approval by National DHI as a Dairy Management System (DMS), the first such program in the US to receive this designation.

How is a DMS different than programs currently available? Currently, PC-based dairy management programs are not regulated. That means a software developer can use any calculation method or procedure to calculate a cow's record. No quality approval program exists

for dairy software. However, to be certified, processing centers use a set of procedures approved by National DHIA. Also, each center must routinely run a test herd through its programs. The records calculated are compared to ensure that comparable results are obtained from different centers. This guarantees that a record computed in California is calculated using the same procedure as one in Vermont. Non-approved PC-programs don't have to meet these standards.

Another class of programs creates a hybrid between microcomputer-based and mainframe programs. In this class, although PC-based, most of the process relies on the main frame. A copy of the database is passed from the mainframe to the on-farm PC. This method ensures the database at the dairy is the same as that at the processing center, at least on the day the herd is processed.

However, a DMS does it all. A DMS processes on the farm plus provides data transfer to a central database. A DMS undergoes the same

rigorous quality certification checks as a mainframe computer. It processes the data at the dairy or supervisor level, just as it would have been calculated at a mainframe, with all the same and MORE options available to the producers. This is done at a lower cost since the producer controls his database. There's no charge for extra options or special listings. Security provisions protect a herd's data flow to a central location.

Historically, the reason for mainframe processing was the high cost associated with buying processing power. Some PC's now have more power than mainframes had a few years ago. PC prices are no longer an obstacle. Thus, it made sense to move the database back to the dairy. Yet, there were many hurdles to overcome:

- Creating new paths for data flow to the Animal Improvement Processing Laboratory (AIPL) and other users of data.
- Providing consultants access to records.
- Ensuring the integrity of the on-farm database.

Implementing the DMS. There are two methods for DMS implementation. One is with a dairy producer using a copy of DairySTOR and working through the technician. On test day, the technician arrives at the dairy. The technician has a key that allows him to process the records as official. The records are processed on the farm without sending anything to another location and the COMPLETE database is ready to be used. Mature equivalents, lactation-to-date, herd averages; all values are current and correct.

In the event components are taken, samples are sent to the lab, along with a file, and then returned to the dairy electronically. The herds are then re-processed at the dairy. A major departure of the program allows a user to record milk weights more frequently than when the herd is officially tested. Those records remain part of the record for the cows. Unlike other programs that only accept data as part of the permanent record if processed, DairySTOR identifies which weights are obtained on supervised versus non-supervised days. It uses the appropriate weights for official calculations but also allows use of the other for herd management purposes. Many dairy producers realize milk weights are needed more

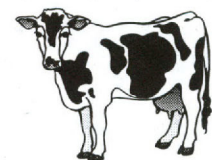
frequently than monthly and this program allows them to use and RETAIN their numbers.

The second method is through supervisors equipped with DairySTOR. When they complete data entry, for non-sampled herds or during months in which components are not taken, they leave completed reports at the dairy. These reports include comparable 202, 210 and management reports. If samples are taken, the producer has the option of having preliminary 202 and 210 reports printed (does not include current components) or wait until the lab has processed the samples and sends a completed report to the herd.

What about back-ups and dataflow. When field files are sent to the main office, a backup is made of that file. If the on-farm system fails, the only data lost would be from the last time a file was sent to the main office. A dairy producer may make data available to consultants through a central database. Data also flows to AIPL, breed associations and other users of data. However, the producer decides where the data goes.

Does it work? DairySTOR has been under development for three years. It has been field tested in three herds over the past 19 months.

Why did we do it? Texas DHIA started this project originally because historic service providers were reluctant to develop software based on a PC platform, with the central location serving as a backup to the PC. However, the need for on-farm management continued. The importance of an on-farm dynamic database escalated due to added management requirements of dairy producers. Since DHI was evolving into a more service-oriented business, your TDHIA initiated product development. By taking this step, TDHIA takes the first step to an integrated suite for on-farm dairy management. An example of the integration of production and feeding is our FeedSTOR program. This is just the beginning of providing a comprehensive set of dairy management and analytical programs.



New List Server Discussion Group

An Information Source for the Dairy Industry of Texas

Ellen Jordan, Extension Dairy Specialist

Many of you may have heard of dairy-l, the national computerized list server for the dairy industry. A new list server/discussion group has been initiated with a narrower focus as a result of requests from several producers. It is designed for the dairy industry of the state of Texas and academic and industry professionals who serve the industry's needs.

The TXDairy list server has been created to provide a forum for quickly soliciting help, asking questions, sharing news and distributing information about the Texas dairy industry and issues impacting it. The service is free, and targets Texas dairy producers and the academic and industry professionals who provide advice and services to them. Since this list server is on a public server, it **MAY NOT** be used to advertise products or services; however, job listings may be posted for positions within Texas.

What is a List Server? A list server is an automatic mailing list to which a group of people subscribe. Belonging to a list server discussion group provides two benefits. First, you can send information to a group, large or small, of people by sending a single message. Secondly, as a group subscriber, you receive all messages posted to the list server.

The major advantage of a list server is that the mailing list is automatically kept up-to-date by the list server computer and the group moderator. Since the group consists of people interested enough in the group's subject matter to subscribe, you can be reasonably sure your message is sent to people who are interested in what you have to say, or ask.

Will this mean a lot of junk e-mail? List servers vary in their size and mail volume. Some are huge with lots of e-mail being forwarded every day. Others are small, with only a few messages sent each month. Since this is a new group, it is yet to be seen how busy it will be.

How does TXDairy differ from Dairy-l?

TXDairy is being initiated solely to serve the Texas dairy industry and its unique environment. By limiting the geographical area, we hope to provide a more targeted audience, thus providing responses and information more applicable to our conditions. By keeping the focus of the group well-defined, it is anticipated that the e-mail volume will be modest and focused on issues of real interest to the Texas dairy industry.

How Do I Subscribe? As an e-mail user, it is simple to subscribe to TXDairy. Simply send a message to the following address:

wpodom2.county-agents.gwlist@taexgw.tamu.edu
Include in your message the one line command:
subscribe txdairy

This is how your e-mail should look: ⇒

TO:
wpodom2.county-agents.gwlist@taexgw.tamu.edu
SUBJECT: <leave this line blank>
MESSAGE: subscribe txdairy
<note the standard Internet convention which uses all lower case letters>

That's all there is to it. The list server computer will send you a confirmation message to let you know that you have been successfully subscribed.

What if I want to get out? Should you decide that you no longer wish to subscribe to TXDairy, it's as easy to get out as it was to get in. Send an e-mail to the same address you used to subscribe, with the one line command: unsubscribe txdairy

This is how your e-mail should look: ⇒

TO:
wpodom2.county-agents.gwlist@taexgw.tamu.edu
SUBJECT: <leave this line blank>
MESSAGE: unsubscribe txdairy

IMPORTANT: List server commands (subscribe and unsubscribe) **MUST** be in the message field of the e-mail view, **NOT** the subject field. You can include only one command per mail message.

Questions?

Should you experience problems in subscribing, or have any further questions about this list server, contact the moderator:

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Professor and Extension Dairy Specialist
Texas A&M University Research & Extension Center
17360 Coit Road
Dallas, Texas 75252-6599
Phone: 972-952-9212 / FAX: 972-952-9632
E-mail: e-jordan2@tamu.edu

DHI – Open Border

Michael Tomaszewski, Extension Dairy Specialist

Much has happened to the DHI program in the last several years. Dairy producers are no longer restricted to one service provider for DHI service. Certified independent service providers (ISPs) now also offer DHI programs and services. State associations are no longer bound by state boundaries. With this change, state associations have become service affiliates. Although the change may seem insignificant, the result is DHI becoming a more business and service-oriented organization.

To meet these changes, Texas DHI has certified two ISPs. In addition, Texas DHI is more active in expanding its market area. For example,

Texas DHIA now provides service to herds in New Mexico and Oklahoma. Also, most county associations have merged into the service affiliate. The Texas field coordinators now handle all technicians and supplies. One advantage of this structure is that technicians, not bound by county lines, move where they're needed. And producers are able to select their processing center. Texas DHIA herds are processed now through four centers - Raleigh, Provo, AgriTech (California) and Texas.

DHI has changed. Compare service and price. However, the fact remains if you can't measure it, you can't manage it.

FeedSTOR – What are your Feed Cost?

Michael Tomaszewski, Extension Dairy Specialist

Although feed costs are 45 to 60% of total expenses for a dairy, tracking inventory and allocating cost has not been easy. Now FeedSTOR, a program that allows inventory tracking, is available to tie production information on actual cows in each feed group/pen and calculate the feed cost per day by cow/pen/group or herd.

How does it work? FeedSTOR is an integrated part of the DairySuite concept under development by the Texas DHI. Information also can be entered manually.

To start, an inventory is established. If no inventory exists, create the inventory as feed stuffs are purchased. If inventory has been purchased

from several sources and the loads co-mingled; determine a starting weight and price for each commodity.

From that point forward, FeedSTOR does the rest. For each load received, enter the amount and price paid. The program automatically maintains running totals. Enter in the feeds to be fed by group/pen. The program retrieves from the DairySTOR production database the number of cows in each pen and develops a mixing list that matches automatically to the amount of feed to be mixed. If not using DairySTOR, this data may be hand entered.

An auxiliary program has been developed for a palm computer that allows a user to obtain

the ingredient weights directly from the mixing wagon. Following feeding, adjust to pounds actually fed or allocate a portion to another group of animals. The program calculates actual feeding cost per cow, group, pen or herd. If it's cold and cows eat more, select a percentage increase or decrease to the total feeding program. The program automatically adjusts the amount to mix. Since this is an integrated program, as cows change among pens, the program tracks this

movement and calculates the amount of feed to mix based on the cows now in the pens, daily, not monthly.

Feeds are the biggest expense on a dairy. FeedSTOR is the first program available in the U.S. that integrates production and feeding information. Get a handle on true feeding costs by using FeedSTOR.

INFORMATION FOR DAIRY AND BEEF PRODUCERS -- PROTEIN FEED RULES



Dairy and beef cattle producers are now prohibited from feeding to their cattle certain commonly used protein feed ingredients made from rendered mammalian tissue. The rules, issued in August 1997 by the U.S. Food and Drug Administration (FDA), are designed to prevent the establishment and spread in the U.S. of bovine spongiform encephalopathy (BSE). The disease, commonly known as "mad cow disease," has been found in European cattle herds, but has not been diagnosed in the U.S.

The rule bans most types of protein made from mammalian tissue from feeds given to cattle and other ruminants (four-stomached-animals). An example of this protein is meat and bone meal made from cattle byproducts. Cattle may become infected with BSE when they eat contaminated protein products made from rendered diseased animals.

Feed manufacturers, protein blenders, and rendering companies are required to label any feeds or feed ingredients containing prohibited material with the warning, "Do not feed to cattle or other ruminants." FDA can take action against a company that sells prohibited material that does not have the warning label on it, especially if that feed is sold to cattle producers.

The rule has several provisions that apply to you, dairy or beef cattle producers:

+ You must watch for that warning label and avoid using any prohibited feed in cattle rations.

+ If you suspect that feed may contain prohibited ingredients, don't accept it until you are sure it does not. Buy feed products only from companies that comply with the new rules.

+ If you mix feed for both cattle and non-ruminant animals (such as hogs and poultry) and you use prohibited material in the non-ruminant feed, you must either use a completely separate mixer for the cattle feed or carefully clean out your mixer to be sure no prohibited material contaminates the cattle feed. Even if you don't mix your own feed, but purchase feed for both cattle and non-ruminants, you must make sure that any prohibited material intended for your non-ruminant animals is not accidentally fed to your cattle.

+ You must keep records for a minimum of one year concerning all animal protein ingredients you buy and use with your cattle. For one year, keep copies of purchase invoices and labeling of all feeds that you receive containing animal protein products. The copies must be available for government inspectors. Keep at least one representative copy of the label from each type of feed you buy. FDA on-farm records inspections will be limited, but will be needed to verify that prohibited material is not being sold for feeding to cattle.

If you are careful in selecting feed and feed ingredients, and keep adequate records, you will not be found in violation of FDA's rules. More important, you will be doing all you can to protect your herd from risk of this disease.

Source: FDA, Center for Veterinary Medicine.
1998. INFORMATION FOR DAIRY AND BEEF
PRODUCERS -- PROTEIN FEED RULES, CVM
UPDATE, January 22.

The complete document Animal Proteins Prohibited
from Animal Feed; Small Entity Compliance Guide
can be found at:
<http://www.cvm.fda.gov/fda/infores/updates/bse/guida60.pdf>

East TX Dairy Conference

April 8

The East Texas Dairy Conference will be held Wednesday, April 8 from 9:30 am until 3:00 p.m. at the Winnsboro City Auditorium in the Park. Many dairy producers in Texas have been under financial stress recently. The East Texas area has been hit extremely hard and is undergoing some restructuring. As the new milk marketing cooperative has been formed, East Texas is grouped in with the Southeast milk market, while other parts of Texas are linked with states to the west. Consequently, discussion is focused on the style of management and marketing in East Texas. The presentations include:

- ☞ National Dairy Outlook, John Collins, Southern Division of Dairy Farmers of America
- ☞ East Texas Dairy Outlook, Dr. David Anderson, TAMU Ag & Food Policy Center
- ☞ Dynamic Business Development, Jim Yount, President of Successful Dynamics Sys.
- ☞ Financial Institution Requirements and Why, Keith Shurtleff, area banker
- ☞ Defining Changes that a Dairyman Must Make, Dr. Ellen Jordan, Extension Dairy Specialist
- ☞ Transition Decisions, Dr. Wayne Hayenga, Extension Economist - Management

TX Dairy Producers Conference

March 24

On Tuesday, March 24, 1998 the Texas Dairy Producer's Conference will be held in Stephenville at the Student Center Ballroom of Tarleton State University. This conference has been planned by the Extension Committees of Erath, Comanche and Archer Counties. Registration will begin at 9:30 and the program will conclude at 4:00.

The presentations include:

- ☞ Cost-effective vaccination programs for Texas by Vic Cortese, who is a veterinarian with Pfizer Animal Health
- ☞ Identifying, training, and keeping good people by Dr. Bob Milligan, Cornell University
- ☞ Freestall housing by Mike Gamroth, Oregon State University and a panel of producers from the Stephenville area
- ☞ The future of dairying in Texas and how to compete with western production and what herd sizes will be competitive long-term by Dr. David Anderson, TAMU Ag & Food Policy Center.

Listening Session
Federal Milk Order Reform Rule
Monday, March 30 – Hyatt Regency DFW Airport – West Tower
Contact: Cary Hunter or Cindy Taylor — (972) 245-6060

Balanced Dairying Calendar of Events

March 19-21 - Texas Holstein Association State Show, Tarleton State University Equine Center, Stephenville, Texas
Contact: Bobby McDonald, 903-885-9755

March 24 - Texas Dairy Producer's Conference Student Center Ballroom, 10 a.m. - 3 p.m. Tarleton State University, Stephenville, Texas
Contact: Sandy Stokes, 254-965-3759

April 8 - East Texas Dairy Conference 9:30am until 3:00 p.m., Winnsboro City Auditorium in the Park
Contact: Larry Spradlin, 903-885-3443

April 15 - DOPA Training, Stephenville, Texas
Contact: Sandy Stokes, 254-965-3759

April 15-17 - Professional Heifer Grower's Conference, Reno Nevada
Contact: Washington State Univ. 800-942-4978

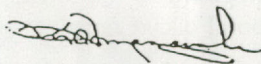
May 7 and 8 - Mid-South Ruminant Nutrition Conference, Holiday Inn - DFW South, Irving, Texas
Contact: Ellen Jordan, 972-952-9212

June 3 - State 4-H Dairy Judging Contest College Station, Texas
Contact: E. Max Sudweeks, 903-834-6191

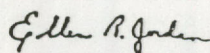
June 4 - State 4-H Dairy Demonstration Contest College Station, Texas
Contact: Michael Tomaszewski, 409-845-5709

June 25-26 - Southwest Milk Marketing Conference, San Antonio, Texas
Contact: Robert "Bud" Schwart, Jr., 409-845-5284

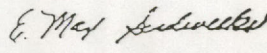
To Our Readers: This issue of Balanced Dairying contains several articles that relate to DHI and processing of data. As profit margins narrow, your need for timely, accurate information is essential for herd management. For additional information on any of the material contained in the articles, contact one of the Extension Dairy Specialists.



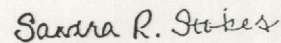
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