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Balanced Dairying PRODUCTION

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DAIRY TECHNICAL REVIEW
METABOLIC DISORDER MANAGEMENT

Sandra R. Stokes, Extension Specialist
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A Dairy Technical Review focusing on Metabolic Disorder Management was held at Tarleton State University's teaching pavilion in August. The review was a joint effort between Tarleton State University and Texas Agricultural Extension Service. Morning sessions addressed diagnosis and early treatment of displaced abomasum (**DA**), milk fever, ketosis, and acidosis, followed by presentations on preventive nutrition and ration particle size evaluation. The afternoon sessions included demonstrations of various diagnostic techniques from local veterinarians and a discussion of drug use.

Presenters with a wide range of experience included Tom Kasari and Buddy Faries (DVMs, Texas A&M University, College Station), Tim Brown (Associate Professor, Tarleton State University, Stephenville), Ellen Jordan (Extension Dairy Specialist, Texas A&M University, Dallas), and Sandy Stokes (Extension Dairy Specialist, Texas A&M University, Stephenville). Local veterinarians provided demonstrations and discussion of diagnostic techniques. This group included Drs. Bob Waldron (Stephenville), Dennis Reed (Dublin), and Duane Hutchins (Stephenville).

DIAGNOSIS AND EARLY TREATMENT FOR METABOLIC PROBLEMS IN THE FRESH COW

Displaced abomasum. Dr. Tom Kasari pointed out that left-sided DA is more than seven times as common as a right-sided DA with the greatest risk occurring in the first 30 days post-partum. Causes involve both management and nutritional factors, with overcrowding of the fresh pen being a major contributor to problems in this group. Clinical signs include depressed appetite, change in feces, depressed milk production, and the tell-tale *ping* under the ribs of the body. Treatments include surgery and supportive therapy.

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

The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating

Milk fever. There is an increased risk with heavy milkers, especially older cows (rare in first calf heifers). Most cases (90%) occur during the first 48 hours post-partum. Causes usually are related to nutrition or feed management. Clinical signs include restlessness, muscle tremors and a staggering gait. Treatments include oral calcium gels or intravenous calcium solutions.

Ketosis. Dr. Kasari explained the importance of identifying whether a ketosis problem is a primary (spontaneous imbalance in metabolism; independent of disease) or secondary (consequence of a primary disease that reduces appetite and triggers metabolism imbalance) problem. The occurrence is higher in 5 to 8 year-old cows and usually within 1 to 6 weeks of lactation (near peak production). Treatment involves correcting any underlying disease conditions and may include oral propylene glycol and/or a glucose IV.

Preventive nutrition of these conditions revolves around the close up cows (3 weeks pre-calving). Providing a good *steam-up* ration and encouraging intakes during the last 3 weeks of pregnancy and through the first 30 days in milk will go a long way toward keeping these problems in check. The use of anionic salts in the steam-up ration was discussed. The take-home message was focused around transition management (3 weeks pre-calving through 30-60 days into lactation). If appetite stays healthy throughout this period, the incidence of metabolic problems is minimal. Producers need to monitor intakes of these groups and have rations formulated accordingly. Beware of borderline situations. For example, while herds with borderline blood calcium levels may not show classic signs of milk fever, they typically will have depressed appetites and lower milk production than their potential. These herds may also experience higher incidence of ketosis, DA, retained placentas and metritis cases.

DIAGNOSIS AND EARLY TREATMENT OF ACIDOSIS AND LAMINITIS

The occurrence of laminitis is higher in intensively-managed herds. Laminitis may be related to nutrition (fermentable carbohydrate overload), health conditions (retained placenta, metritis, mastitis), or environment (concrete surfaces). The condition involves an interruption of normal circulation in the hoof and may include the circulation of histamine, lactic acid, or endotoxins. The importance of identifying the various foot disorders was discussed and a reference piece (with graphics) was included in the take-home manual to assist with identifying the various foot problems. Risk factors involving environment, health, and nutrition were explained.

Preventive nutrition for acidosis includes a properly balanced ration. Be aware of starch and fiber balance. It is a fine line between supplying enough energy for early lactation and avoiding too rapid weight loss, and maintaining adequate effective fiber in the diet to support good rumen function. The use of buffers in the high group rations helps high-producing cows walk this balance beam.

A recent area of interest involves the evaluation of ration particle length. The Penn State Particle Separator was demonstrated for evaluating effective fiber length in a TMR sample. Evaluating ration particle size is becoming more common; however, current recommendations are based on diets from the upper Midwest where corn silage and alfalfa haylage are major components. Data is being collected from Texas rations to develop guidelines for our producers.

DEMONSTRATIONS OF DIAGNOSTIC TECHNIQUES

A panel of local dairy veterinarians (Drs. Waldron, Reed, Hutchins) demonstrated various techniques to be used in herd health programs. These ranged from the basics of animal restraint for treatment (such as casting) to newer, more diagnostic-type techniques (including urine pH determination in close up cows, use of ketostrips for early ketosis diagnosis, and ruminocentesis for monitoring acidosis potential). Discussion of preferences and successes/failures included both the veterinarian panel and participants.

DRUG MANAGEMENT

Dr. Buddy Faries discussed extra-label use of animal drugs. He included definitions (on-label vs off-label use) and interpretations of label specifications and references for label requirements were included in the take-home manuals. He strongly encouraged everyone to carefully read label directions on drugs for animal use and to follow these instructions. This is the best way to ensure the drug works properly and results in no residue problems in milk or meat.

Next Dairy Technical Review, December 3 - Reproductive Management
Contact: Dr. Sandy Stokes, 817-968-4144

Fall Survival Strategies

Ellen R. Jordan and E. Max Sudweeks
Professors and Extension Dairy Specialists

The drought is affecting every facet of agriculture including dairy. Although some parts of the state have received rain in July and August, other parts remain very dry. Many producers are still faced with limited forage supplies as a result of reduced hay and silage production and continued drought on this years crops. In addition, concentrate prices have sky rocketed. If producers are to survive they need to develop a strategy and follow it. Now is the time to review what you are doing and make needed management changes.

Meeting forage needs

1. Determine how much forage is needed and what is available locally.
2. Investigate the potential for buying high quality alfalfa to supplement poor quality or non-existent home grown forages.
3. Store hay to minimize losses.
4. Test your hay and balance rations accordingly.
5. Use forage extenders such as cottonseed hulls when practical and economical.
6. Minimize waste in feeding by chopping and including forage in total mixed rations instead of feeding in round bale rings where feasible.
7. Feed your highest producers the best quality forage available. Incorporate lower quality forages into lower producer rations.
8. Harvest set aside acreages when available and include them in your ration as fiber fill sources.
9. Plant winter forages.

Coping with high grain costs

1. Consider using alternative feeds such as bakery waste, beet pulp, wet brewers grain, maltage, corn gluten feed, hominy feed, whole cottonseed, cottonseed hulls, wheat midds, rice bran and rice hulls.
2. Group cows according to nutrient needs and feed accordingly.
3. Determine whether switching to a total mixed ration would allow you to stretch your feed budget by incorporating lower quality feeds or less palatable feeds.
4. Consider contracting feeds during harvest or when reduced prices are available.
5. Calibrate your weighing devices to ensure accurate ration formulation.
6. Evaluate grain processing methods to increase digestibility.

Cull unprofitable animals

1. Evaluate which cows in the lactating herd are profitable and cull the bottom end.
2. Determine how many heifers you are going to need as replacements and sell the surplus.
3. Switch to artificial insemination and save the cost of feeding a bull while improving genetic gain.
4. Reduce somatic cell counts by culling high somatic cell count cows.

Maintain reproduction

1. Watch for heats. Spend time in the late evening and early morning detecting heats when cows are most active.
2. Check your thermometer to ensure proper thawing temperatures.
3. Do not leave insemination equipment in the sun so that you cook the semen.
4. Use young sire semen to stretch your purchasing power.
5. Monitor your nitrogen tank for possible leaks.

Miscellaneous strategies

1. Feed ionophores to heifers to improve feed efficiency.
2. Consider using bovine somatotropin to improve productivity of late lactation cows.
3. Reduce somatic cell counts. Cows with lower somatic cell counts produce more milk.
4. Keep dry periods between 40 and 70 days in length for optimal production in the next lactation.

5. Install scales to verify the weights on loads of purchased feeds.

6. Keep accurate production and financial records to help determine which strategies will improve your bottom line.

Managing Risk[A]

Reduced government support of agricultural commodities and the threat of deregulation of the dairy market structure has significantly reduced the security and stability for producers. Add to this scenario the wild weather patterns of the last couple of years, plus their effects on forage quality and commodity prices, and you have a recipe for *jack-in-the-box* financial statements. Therefore, it's time to think more about managing the revenue and expense risks associated with the cash flow of farm businesses. Let's take a brief look at mechanisms for pricing commodities, the role of futures markets in our economy and what specifications a futures contract contains.

Established Pricing Markets

Producers have three methods available to price the commodities they produce and use: the cash market, cash forward contracts and the futures market. All three are closely related in their behavior.

The cash market, otherwise known as the spot market or prompt market, is the one we're most familiar with. When spot markets are volatile, risk increases because the value of farm and feed mill inventories fluctuates widely.

The cash forward contract market is like the spot market except that it calls for delivery in the future. The contracts are specific to the two parties involved and, therefore, can't be sold readily to outsiders. The contract generally specifies the quantity, quality, delivery place and date, and price. Generally, the amount to be bought or sold is limited to what the parties need to buy or have to sell. They have two major drawbacks. (1) Each party is always at the risk of default by the other party. (2) The contracts are very rigid and difficult, if not impossible, to reverse.

The futures market, while similar to the cash forward contract market, involves trading standardized contracts where quantity, quality, delivery place, and delivery time are specified in advance. Therefore, they are pure price markets where contracts are easily bought and sold by anyone. The risks of default are greatly reduced since a margin deposit is required up-front. However, if the market moves against you, an additional margin deposit, or margin call, will be required. Unlike the cash and cash forward contract markets, where the amount bought or sold is limited, the futures market allows unlimited sales and purchases of contracts.

What Futures Markets Accomplish

Futures markets tend to smooth out the peaks and troughs in price variation from speculators trying to sell high and buy low. They have a *stock rationing* capability in that they serve to *dole out* the old crop to the highest bidder until the following harvest. Futures markets establish a price for delivery or accepting delivery of a standardized commodity at a future date. Futures markets allow producers to make management and production decisions prior to planting based on expected profitability of alternative crops. Dairy producers can use futures markets to price both expected milk production and feed commodities they use. Futures markets rely on three conditions:

1. **Price volatility** - price swings entice speculators into the market because of the opportunity for windfall profits.
2. **Homogeneous commodities** - standard measures of quality, quantity, and delivery location are necessary to make the contracts easily transferrable.
3. **Competitive market structure** - a large number of buyers and sellers is necessary to make the market function correctly.

What Futures Contracts Are

Futures contracts are standardized contracts which represent a legal obligation for the holder to purchase or deliver a commodity. They are traded all year long, but delivery months are limited. A person trading futures

contracts has a choice of several destinations for delivery. It's important to note that no one must make or take delivery of the contract. They simply need to *close out* their position by either buying or selling the contract before the contract comes to term.

The local newspaper shows daily market reports of futures prices for farm commodities. The reader can find a market quote which contains the size, quality, destination, and month of delivery. For example, the specifications for a standard corn contract are: 5,000 bushels of number 2 yellow, delivered to Chicago, in the months of March, May, July, September, or December. There are three aspects which make futures contracts attractive:

1. Ease of transfer between buyers and sellers.
2. Small initial margins can control a contract (usually about 5% of value).
3. The chance to profit from both upswings and downswings in the market.

Summary

Again, producers and consumers of agricultural commodities have three markets available for pricing the commodities they use and sell: cash, cash forward contracts, and futures market. The functioning of these markets are closely related and have advantages and disadvantages. Futures markets provide a glimpse of coming prices, which can aid planting and purchasing decisions.

^This article was adapted by Ken Stokes, Extension Economist, Dallas, from an article written by James R. Romack, Extension Specialist/Pro-Dairy, Cornell, which appeared in *The Manager*, August, 1996.

Demonstration Report
Lake Fork Creek Hydrologic Unit Project

E. Max Sudweeks
Professor and Extension Dairy Specialist

The Field Day for the Lake Fork Creek Hydrologic Unit Project was held in June at the Yantis School with afternoon tours in surrounding communities. Subjects included were:

- Tex*A*Syst - a program to ensure quality ground water with proper well head construction and maintenance;
- Maintenance of waste systems for dairy farms;
- Farm Services Agency programs to protect surface and ground water;
- Dairy economics and milk marketing;
- Commercial exhibits.

Tours included:

Lane Material Options

Different lane materials were demonstrated at the **Jetton Dairy** for pasture managed dairy cattle. Materials consisted of crushed sandstone, crushed limestone, and flyash from a generating plant. A geotextile, polymer material, was used under each material to secure a firmer and permanent lane base. Cost per running foot of lane was $7.95, $7.40 and $8.50, respectively, for the sandstone, limestone and flyash bases. The geotextile costs $0.74 per square yard. More details are available from Ed Hansalik at 903-439-1870.

Alfagraze®

In a first year planting on the **Asbill Dairy**, Alfagraze® was planted in late November last year. The first crop was just ready to cut. The stand looked vigorous in spite of recent dry weather. The 11-acre plot now has been cut three times and yielded about 14 large rolls of high quality alfalfa hay per cutting. The crop will be grazed in the next cropping year. It is on fine sandy loam soil and holds good promise as a new forage crop for East Texas.

Composting

Various manure composting methods were discussed on the **Vellenga Dairy** and a composting vessel which handles waste from about 250 mature Holstein cows was demonstrated. The end product is being investigated as a substitute for peat moss for the Texas horticulture bedding industry. Contact Dr. Don Cawthon of East Texas State University (Texas A&M University at Commerce) for more details.

Request written material on each session from E. Max Sudweeks.

TEXAS SUMMARY FOR JUNE 1996

Information Summarized	6/30/95	5/31/96	6/30/96
DHI-DHIR Herds (cows)	472	393	385
DHI-DHIR Cows	121,050	112,521	111,630
Avg. Milk/Cow/Day	48.9	54.8	50.7
Avg. Percent Fat	3.5	3.5	3.5
Avg. Fat/Cow/Day	1.74	1.95	1.78
Avg. Feed Cost/Cwt. Milk	5.91	6.26	6.84
Private Herds	95	84	82
Private Cows	27,435	24,345	23,692
DHI-DHIR Herds (goats)	63	68	69
DHI-DHIR Goats	1089	918	1163
Total Herds Enrolled	630	545	536
Total Animals Enrolled	149,574	137,784	136,485

High DHI Herds.....Michael A. Tomaszewski

These rankings are furnished by the DRPC at Raleigh for a given period of time. If a herd was tested late one month, it may cause that herd's average not to appear on that month's listing. The average would then be compared to other herd averages in the next month. Herds are ranked by test day averages for all cows. Only official herd averages are used. String averages are not used if they are not official. We have no control over how the herds appear on this list since it is a computer listing.

Ranking by Protein

Herd Owner	Milk (lbs)	Protein (lbs)
*** 2X/Day Milking**		
James Veitenheimer Dairy	71.7	2.34
Moer-Milk Dairy	71.3	2.33
Frank Wolf	74.4	2.26
Brian Vieth	70.2	2.14
Osterman Dairy Inc	67.8	2.06
On The Go Holstein Farm H-S1	67.1	2.05
Dillard & Jake Schenk Dairy	64.3	1.99
Owen & Janet Sieperda	60.3	1.93
*** 3X/Day Milking**		
H U Degroot	71.0	2.23
Ray Johnston	71.5	2.22
Larry K Martindale	73.2	2.17
Dan & Janet Martin Dairy	67.7	2.13
Terry Berend Dairy	70.5	2.10
Brian Meurer	66.3	2.06
Norwood Dairy	62.0	2.02
Rio Grande Dairy	67.8	2.00

Ranking by Milk

Herd Owner	Milk (lbs)	Fat (%)	Protein (%)
*** 2X/Day Milking**			
Frank Wolf	74.4	3.9	3.1
James Veitenheimer Dairy	71.7	3.7	3.3
Moer-Milk Dairy	71.3	3.6	3.3
Brian Vieth	70.2	3.7	3.1
Osterman Dairy Inc	67.8	3.6	3.1
On The Go Holstein H-S1	67.1	3.1	3.1
Dillard & Jake Schenk	64.3	3.4	3.1
Lawrence Schroeder Dairy	63.4	3.4	3.1
*** 3X/Day Milking**			
Larry K Martindale	73.2	3.7	3.0
Ray Johnston	71.5	3.6	3.1
H U Degroot	71.0	3.7	3.2
Terry Berend Dairy	70.5	3.7	3.0
Rio Grande Dairy	67.8	3.4	3.0
Dan & Janet Martin Dairy	67.7	3.6	3.2
Tony T Bos & Family	67.1	3.3	2.9
Brian Meurer	66.3	3.5	3.1

Top Ten 305-Day Lactation Records

Following are the ten highest DHI mature equivalent, 305-day lactation records for butterfat production reported to the Extension Dairy Science office during June from the Processing Center at Raleigh, North Carolina.

Herd Owner	Cow Identity	Breed	Date of Birth	% Fat	ME Milk	ME Fat
Elm Creek Farm	14123372	H	05-22-90	6.7	23,329	1636
Elm Creek Farm	12879694	H	10-02-86	6.2	23,406	1377
Moer-Milk Dairy	14826836	H	02-23-92	4.2	32,161	1319
Teichman Bros	74SDJ4900	H	11-07-91	4.7	28,289	1300
Elm Creek Farm	15089951	H	03-08-93	6.4	21,603	1288
Elm Creek Farm	15176947	H	06-25-93	6.4	24,017	1279
Smith Dairy	14449969	H	06-07-91	4.2	28,581	1271
Moer-Milk Dairy	13884745	H	02-09-89	4.5	27,609	1239
Nico Deboer	379050176	J	09-19-90	4.7	26,784	1235
Bendora Dairy LLC	379316663	B	11-04-85	5.2	23,539	1233

TEXAS SUMMARY FOR JULY 1996

Information Summarized	7/31/95	6/30/96	7/31/96
DHI-DHIR Herds (cows)	458	385	380
DHI-DHIR Cows	118,658	111,630	111,693
Avg. Milk/Cow/Day	45.2	50.7	45.3
Avg. Percent Fat	3.5	3.5	3.5
Avg. Fat/Cow/Day	1.60	1.78	1.59
Avg. Feed Cost/Cwt. Milk	6.26	6.84	5.17
Private Herds	91	82	81
Private Cows	25,966	23,692	24,568
DHI-DHIR Herds (goats)	59	69	68
DHI-DHIR Goats	1007	1163	1105
Total Herds Enrolled	608	536	529
Total Animals Enrolled	145,631	136,485	137,366

High DHI Herds.....Michael A. Tomaszewski

These rankings are furnished by the DRPC at Raleigh for a given period of time. If a herd was tested late one month, it may cause that herd's average not to appear on that month's listing. The average would then be compared to other herd averages in the next month. Herds are ranked by test day averages for all cows. Only official herd averages are used. String averages are not used if they are not official. We have no control over how the herds appear on this list since it is a computer listing.

Ranking by Protein

Herd Owner	Milk (lbs)	Protein (lbs)
• 2X/Day Milking		
Hinders Dairy Inc	66.2	2.04
James Veitenheimer Dairy	63.1	2.01
Ralph Albracht	59.7	1.86
David M Owens	57.8	1.83
Stanley J Haedge	59.9	1.82
Braddock Dairy B-all	53.0	1.80
Jerry Vieth	56.1	1.78
Joseph A Dean	54.7	1.78
• 3X/Day Milking		
Larry K Martindale	74.2	2.30
Ray Johnston	69.9	2.22
Dan & Janet Martin Dairy	64.7	2.13
Ernie Prescher	67.9	2.10
H U Degroot	57.8	1.88
Smith Dairy	61.0	1.86
Robert Steinberger Sr	58.8	1.85
Desert View Dairy	60.4	1.83

Ranking by Milk

Herd Owner	Milk (lbs)	Fat (%)	Protein (%)
• 2X/Day Milking			
Hinders Dairy Inc	66.2	3.4	3.1
James Veitenheimer Dairy	63.1	3.7	3.2
Stanley J Haedge	59.9	3.4	3.0
Ralph Albracht	59.7	3.5	3.1
David M Owens	57.8	3.4	3.2
Wes Vieth Dairy	56.6	3.6	3.1
Jerry Vieth	56.1	3.9	3.2
Clifford Pennartz	56.0	3.5	2.9
• 3X/Day Milking			
Larry K Martindale	74.2	3.6	3.1
Ray Johnston	69.9	3.5	3.2
Ernie Prescher	67.9	3.4	3.1
Dan & Janet Martin Dairy	64.7	3.5	3.3
Tony T Bos & Family	62.4	3.3	2.9
Smith Dairy	61.0	3.5	3.1
Rio Grande Dairy	60.7	3.3	2.9
Desert View Dairy	60.4	3.4	3.0

Top Ten 305-Day Lactation Records

Following are the ten highest DHI mature equivalent, 305-day lactation records for butterfat production reported to the Extension Dairy Science office during June from the Processing Center at Raleigh, North Carolina.

Herd Owner	Cow Identity	Breed	Date of Birth	% Fat	ME Milk	ME Fat
George De Vries	74WDL9255	H	06-05-92	3.8	38,506	1427
James Veitenheimer Dairy	14940769	H	11-04-91	4.2	34,324	1407
Hinders Dairy Inc	14800914	H	06-21-92	4.3	33,494	1394
James Veitenheimer Dairy	74WDO7024	H	09-01-93	4.5	30,464	1311
Hinders Dairy Inc	14431401	H	12-19-90	4.0	33,261	1300
Hinders Dairy Inc	74WDM4405	H	03-25-92	4.7	28,491	1297
Dan & Janet Martin Dairy	35ZNM5879	H	05-05-91	4.5	28,662	1288
Bill Wolf Dairy	74SJE2940	H	02-18-92	4.2	31,254	1280
Hinders Dairy Inc	13948342	H	11-07-89	4.0	32,855	1277
James Veitenheimer Dairy	74WDJ9895	H	06-00-91	3.8	34,078	1268