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Balanced Dairying PRODUCTION

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Lameness in Dairy Cattle

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Lameness in dairy cattle is all too frequent -- an estimated 15% of cows are affected. Dr. Jan Shearer, University of Florida, says 90% of all lameness is in the foot. Among cows exhibiting foot lameness, approximately 90% are in the rear hooves. Further, nearly 90% of these are lame in the outer rear claw. If the problem is on the front, the inner claw is usually affected.

Footbaths are somewhat effective for treating footrot; however, only marginally effective for treating laminitis. The most common footbaths used are formalin or copper sulfate. Lime has also been used with varying success. Although foot rot may be a problem in some herds, laminitis is far more common.

Laminitis, a diffuse aseptic inflammation of the sensitive lamina, can be acute, chronic or subclinical. The distinct features of chronic laminitis are a horizontal ridge on the hoof, claw deformity, widening of the white line (which predisposes to sole abscesses), and finally rotation of the pedal bone. The horizontal line indicates an interruption of growth of the hoof. It takes approximately one year from the time growth begins at the coronet band to when the new growth reaches the toe of the hoof. Thus, you can estimate the approximate time when the laminitis occurred based upon the horizontal ring.

With subclinical laminitis, the cows exhibit a normal gait. Generalized softening of the hoof tissue leads to an increase in wear. Some indication of hemorrhaging on the sole and swelling and redness of the coronary band can occur.

A number of causes exist for laminitis. Some nutritional causes include excess protein or carbohydrate consumption, inadequate roughage or fiber intake, and mycotoxins. Systemic diseases, such as retained placenta, metritis, mastitis, and ketosis, predispose cows to laminitis. The greatest

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incidence of laminitis occurs within the first three months of lactation, probably related to intake depression near calving. First calf heifers are particularly susceptible, as are heifers gaining more than 2.2 pounds per day.

Management practices associated with increased laminitis include: slug feeding of concentrates, inadequate number of free stalls, and excess time in the holding pen.

Most dairy farmers are all too familiar with the condition, digital dermatitis, also called: *hairy heel warts*, *strawberry heels*, *digital warts*, *interdigital papillomatosis*, *Montellaro*, etc. These warts result in lameness, weight loss, decreased milk production, and decreased fertility from poor expression of estrus.

Typically, the warts first appear above the heel bulbs on the back of the hind feet. They also occur on front feet, but seem to predominate on the rear. They can spread rapidly through a herd. Some warts can be seen in the interdigital area, or even on the dorsum of the foot. The warts can have projections resembling hairs. Some lesions become ulcerated, with erosion of the junction of the skin and horn and undermining of horny tissue.

Many therapies have been utilized. Medicated foot wraps using oxytetracycline, copper sulfate, or iodine crystals, with or without surgical excision, have helped. However, this approach is labor intensive. Regimens of injectable antibiotics, such as penicillin G or ceftiofur, have also been utilized, but require milk withholding.

Various foot baths have been effective. Copper sulfate has not worked particularly well, while formaldehyde baths sometimes have. Formaldehyde may result in worker complaints from eye and nasal irritation, as well as potential legal or regulatory problems because of environmental contamination. Lime in traffic areas has also been used with varying success. Oxytetracycline in a foot bath, once weekly, has been successful. If cows drink from a foot bath, oxytetracycline could be a source of an illegal milk residue, but assuming only topical application, no milk withdrawal would be required.

Whatever the material utilized, foot baths can become contaminated. Some veterinarians are concerned that foot baths may serve as sources of

spread for foot warts rather than cures, particularly in large herds. Hoof trimmers must also be careful not to spread the disease. Producers should request hoof trimmers and veterinarians to decontaminate their hoof tools, not only prior to beginning work, but between animals as well. Sanitation, regular manure removal, and keeping floors and alleys as dry as possible are critical factors in minimizing the spread.

One approach being tried in a series of experiments at the University of Florida dairy herd by Dr. Jan Shearer is to spray feet in the parlor with an oxytetracycline solution. Oxytetracycline is being mixed in de-ionized water to a final concentration of 25 mg/ml. (One 102.4 gram packet or two 51.2 gram packets per gallon.) Every cow in the herd is treated with this solution once daily for five days. After no treatment for two days, they are treated again every other day for an additional three treatments. After initiating this treatment, 90% of the cows were walking better within three days. Another initial sign of treatment success is formation of a black scab over the wart, which occurs about the time lameness decreases. The scab may take some time to disappear.

All cows in the University of Florida herd are being treated because of the tendency to underestimate the extent of infection. When the trial began, 48 of 350 cows were lame; however, 86 had lesions. By the fifth day of treatment, only three cows were still lame. Treatment of individual cows identified with heel warts had not eliminated the problem in some herds because only those cows with obvious problems were treated, leaving sub-clinical cases untreated. Treating all cows results in some undetected cases being treated and some being prevented.

A commercial hand pump garden sprayer is used in the Florida trial. One squeeze of the sprayer trigger delivers between 10 and 20 ml of solution to each foot. A sprayer wand allows the medication to be applied directly onto the heel and into interdigital cleft. The back feet are easy to reach, but depending on the type of parlor, it is sometimes difficult to spray the front feet. Before spraying with oxytetracycline, the feet are sprayed with water to remove any gross organic debris. This makes the warts more visible, and insures better contact of antibiotic with the lesion. Depending on the pre-milking wash-up system used, this might not be as

necessary in some herds. The treatment is repeated on a monthly basis.

When using oxytetracycline sprays, it is recommended that someone other than the milker do the treating. Any antibiotic solution leaking from the pump could gain entry into the milk system via the milker's hands. So far, no antibiotic residue has occurred in the Florida experiments. However, if this regimen is used, bulk milk MUST be tested.

Before using oxytetracycline in foot baths or sprays, consult with your veterinarian for proper labelling requirements as this is an extra-label use. The cost has been about \$1 per cow per month in the University of Florida herd. This treatment resulted in control of digital dermatitis or hairy heel warts, but not eradication.

References

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ALERT! VESICULAR STOMATITIS

The Texas Animal Health Commission (TAHC) has quarantined a second horse with Vesicular Stomatitis (VS) west of Henderson, Texas, on October 3, 1995. The quarantine effects portions of Rusk, Smith and Cherokee counties.

Vesicular stomatitis is a viral disease that affects cattle, horses and swine as well as a number of other species including humans. The incubation period is from 2 to 8 days. If no secondary infections occur, the animals recover in about two weeks.

Vesicular stomatitis causes blisters in and around an animal's mouth and on tongues, lips, nostrils, hooves and teats. The blisters swell and break, leaving raw tissue that is so painful that infected animals refuse to eat or drink and show signs of lameness. Severe weight loss usually follows and in dairy cattle, a marked decrease in milk production occurs.

In reports from a 1982 vesicular stomatitis outbreak, milk production in herds decreased 3 to 20%, with an average of 10%. Increased culling and mastitis were reported as well.

This is the second case of VS in a horse in Texas. The first horse near McCaulley has been released from quarantine. However, 185 premises (cattle, horses, and llama) have been quarantined in New Mexico, one in Arizona (released), 133 in Colorado, five in Utah, and two in Wyoming.

Action needed: Take special precautions on your dairy to avoid introducing any animals from an area where VS has been reported. If you take livestock to shows, exhibitions, rodeos, parades or other events where they may be exposed to VS, isolate the animals for at least two weeks upon returning home. Purchase animals from reputable dealers who will certify the origin and verify the animals are accompanied by a valid veterinary certificate indicating they are not infected or exposed to VS and have not been on or within 10 miles of an infected premise during the past 30 days.

If you suspect an animal has VS, contact your veterinarian immediately, as well as TAHC, 512-719-0700. Before shipping animals, call to check what new restrictions may have been added since Texas now is considered an infected state.

RESEARCH REPORTS

Effect of selenium supplementation of cows on maternal transfer of selenium to fetal and newborn calves. 1995. M.M. Abdelrahman and R.L. Kincaid. *J. Dairy Sci.* 78:625.

In work done at Washington State University pregnant cows were divided into control and treatment groups and given selenium(Se) by intraruminal bolus at one of two levels, 0 or 3 mg/day, at dry-off. Concentration of Se in the treated group was increased in the blood of the dam and in the colostrum. In addition, calves of treated dams had higher Se in blood and liver. The higher levels in calf livers persisted to 42 days after birth, the last measurement time. Treatment of dams with 3mg Se/day as an intraruminal bolus was adequate for calves to have >2.2 micro g of Se/ g of liver DM, the amount needed to support normal growth and health. *Summary by E. Max Sudweeks, Extension Dairy Specialist.*

Increased milk production of cows in early lactation fed chemically treated soybean meal. 1995. A.S. Atwal, S.Mahadevan, and M.S. Wolynetz. *J. Dairy Sci.* 78:595.

Canadian workers fed four different groups of early lactation Holstein cows, averaging 77 lbs of milk per day, total mixed rations of either 15 or 17% CP. Either regular soybean meal or chemically modified zein treated soybean meal was used as the supplemental protein source. (Zein is a protein from corn.) Digestibilities of dry matter, crude protein and acid detergent fiber were reduced by treatment, while solids corrected milk production and milk components were increased insignificantly between 7 and 16 weeks of lactation. However, the treated group had greater milk persistency after week 17 of lactation. Milk protein persistency was 100.5% for the treated group as compared to 97% for the control. *Summary by E. Max Sudweeks, Extension Dairy Specialist.*

STATEWIDE SOMATIC CELL VALUES

Ellen R. Jordan, Ph.D.
Texas Agricultural Extension Service

Providing consumers top quality dairy products is one way to keep your market for milk. As many of you have heard, some grocery chains and bottlers are increasing the quality requirements on the raw milk they accept. Also, there have been some rumblings about reducing the legal limit for somatic cell counts again.

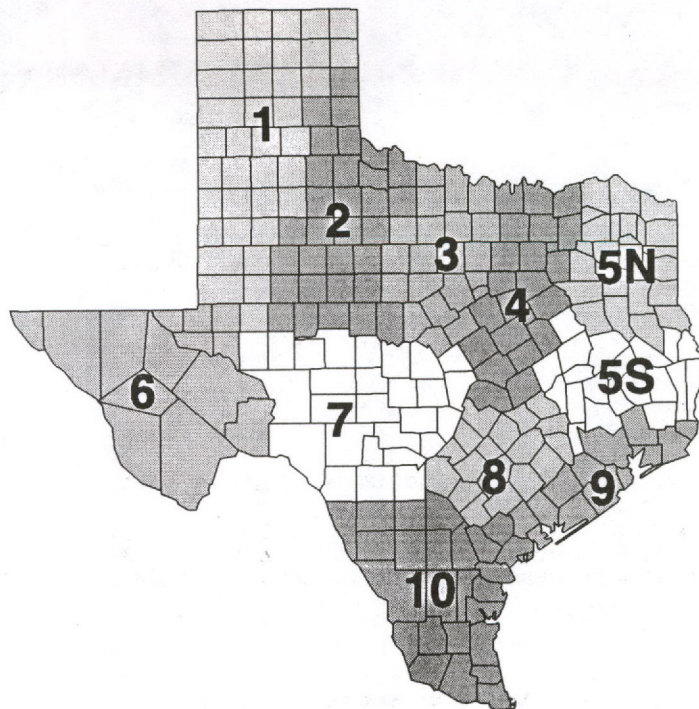
The Texas Milk Market Administrator's office developed the accompanying chart of somatic cell counts which indicates how many herds within a region are in a particular somatic cell count range. For example, in Region 3 the milk from 325 producers has a somatic cell count between 251,000 and 500,000. More than 70% of all producers in the state have somatic cell counts below 500,000.

Use these numbers to compare your current herd status within your region. Not only are you keeping your market by reducing somatic cell counts, you should also increase production per cow.

Herds producing milk with bulk tank somatic cell counts between 200,000 and 400,000 lose approximately 8% in potential milk production annually. As somatic cell counts increase from 400,000 to 1.2 million, 9 to 18% of potential annual production is lost. While the legal limit for somatic cell counts is 750,000, you may be costing yourself a market if you continue to produce milk with a somatic cell count that high. And you are definitely losing production.

TEXAS GEOGRAPHIC REGIONS

AREA	REGION NAME
1	HIGH PLAINS
2	LOW PLAINS
3	CROSTIMBERS
4	BLACKLANDS
5N	NORTH EAST
5S	SOUTH EAST
6	TRANS-PECOS
7	EDWARDS PLATEAU
8	SOUTH CENTRAL
9	UPPER COAST
10	SOUTH



TEXAS PRODUCERS NUMBERS BASED ON SCC VALUE AND GEOGRAPHIC REGION MAY 1995

REGION	SCC (100,000)			
	<u>0-250</u>	<u>251-500</u>	<u>501-750</u>	<u>OVER 750</u>
1 & 2	19	15	12	3
3	87	325	91	9
4	28	145	65	12
5N	125	487	192	47
5S	7	18	7	3
6 & 7	15	17	6	-
8	15	50	22	5
<u>9 & 10</u>	<u>2</u>	<u>24</u>	<u>11</u>	<u>5</u>
TOTAL	298	1,081	406	84
% OF TOTAL	15.94%	57.84%	21.72%	4.49%

TEXAS SUMMARY FOR MAY 1995

Information Summarized	5/31/94	4/30/95	5/31/95
DHI-DHIR Herds (cows)	500	486	483
DHI-DHIR Cows	119,115	121,637	121,574
Avg. Milk/Cow/Day	55.3	53.9	51.7
Avg. Percent Fat	3.5	3.6	3.5
Avg. Fat/Cow/Day	1.97	1.95	1.85
Avg. Feed Cost/Cwt. Milk	5.64	5.62	5.69
Private Herds	111	99	93
Private Cows	28,848	26,770	26,019
DHI-DHIR Herds (goats)	20	55	63
DHI-DHIR Goats	404	969	1084
Total Herds Enrolled	631	640	639
Total Animals Enrolled	148,367	149,376	148,677

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. 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	70.7	2.84
Steve Zotz	79.6	2.44
Terry Berend Dairy	74.7	2.35
Bobby J Traweek	72.7	2.32
Chuck Reiter	67.7	2.30
Dillard & Jake Schenk Dairy	70.1	2.22
Lloyd Wolf Jr	66.2	2.22
On The Go Holstein Farm	69.0	2.21
* 3X/Day Milking		
Roy Roy Dairy Inc	81.0	2.60
High Hill Dairy	74.6	2.50
Dan Martin Dairies Inc	75.1	2.44
David Lawrence	73.9	2.42
High Hill Dairy	73.7	2.40
Clyde Birkenfeld	73.3	2.40
Rancho De Leche	73.2	2.32
Jan Berkrens	70.4	2.26

Ranking by Milk

Herd Owner	Milk (lbs)	Fat (%)	Protein (%)
* 2X/Day Milking			
Steve Zotz	79.6	3.2	3.2
Terry Berend Dairy	74.7	3.9	3.2
Jeff Conrady Dairy	73.0	4.1	3.0
Bobby J Traweek	72.7	3.7	3.2
James Veitenheimer Dairy	70.7	4.0	4.0
Frank Wolf	70.7	3.4	3.1
On The Go Holstein Farm	69.0	3.3	3.2
Keith Tiechman	68.7	3.6	3.1
* 3X/Day Milking			
Roy Roy Dairy Inc	81.0	3.2	3.2
Dan Martin Dairies Inc	75.1	3.5	3.3
High Hill Dairy	74.6	3.5	3.4
David Lawrence	73.9	3.4	3.3
Clyde Birkenfeld	73.3	3.2	3.3
Rancho de Leche	73.2	3.1	3.2
Ray Johnston	70.6	3.4	3.2
Jan Berkrens	70.4	3.2	3.2

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 May from the Processing Center at Raleigh, North Carolina.

Herd Owner	Cow Identity	Breed	Date of Birth	% Fat	ME Milk	ME Fat
Bobby J Traweek	13578627	H	11-07-88	4.4	33,658	1465
James Veitenheimer Dairy	74WDE7419	H	03-00-92	4.6	31,222	1421
Leo Hoff Jr	13888489	H	06-02-89	4.6	28,525	1300
High Hill Dairy	74SEY8072	H	06-17-91	4.4	30,493	1270
James Veitenheimer Dairy	14131404	H	12-05-89	4.1	31,064	1269
Jeff Conrady Dairy	74WDC5059	H	09-02-88	4.0	31,151	1260
Davidson Dairy Inc	74WDJ7302	H	11-02-90	5.1	23,538	1230
Jeff Conrady Dairy	12281930	H	12-01-84	4.4	27,765	1229
Hinders Dairy Inc	74WDA0523	H	04-16-91	4.2	29,562	1221
High Hill Dairy	74WDI0580	H	06-29-89	3.8	32,183	1220

TEXAS SUMMARY FOR JUNE 1995

Information Summarized	6/30/94	5/31/95	6/30/95
DHI-DHIR Herds (cows)	501	483	472
DHI-DHIR Cows	120,481	121,574	121,050
Avg. Milk/Cow/Day	50.3	51.7	48.9
Avg. Percent Fat	3.5	3.5	3.5
Avg. Fat/Cow/Day	1.78	1.85	1.74
Avg. Feed Cost/Cwt. Milk	5.96	5.69	5.91
Private Herds	112	93	95
Private Cows	29,398	26,019	27,435
DHI-DHIR Herds (goats)	20	63	63
DHI-DHIR Goats	411	1084	1089
Total Herds Enrolled	633	639	630
Total Animals Enrolled	150,290	148,677	149,574

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. 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		
Jeff Conrady Dairy	63.6	3.03
Moer-Milk Dairy	72.2	2.32
Frank Wolf	76.0	2.29
Steve Zotz	72.1	2.27
James Veitenheimer Dairy	70.8	2.24
Fine-Meadow Farm	66.1	2.18
Ken Miller	69.6	2.12
Jerry Veith	64.7	2.10
3X/Day Milking		
Roy Roy Dairy Inc	74.6	2.34
Dan Martin Dairies Inc	71.2	2.32
Hinders Dairy Inc	70.1	2.32
Clyde Birkenfeld	70.7	2.31
Jan Berkrens	68.8	2.29
High Hill Dairy	68.2	2.23
Robert Steinberger Sr	64.5	2.11
David Lawrence	66.0	2.08

Ranking by Milk

Herd Owner	Milk (lbs)	Fat (%)	Protein (%)
2X/Day Milking			
Frank Wolf	76.0	3.6	3.0
Moer-Milk Dairy	72.2	3.8	3.2
Steve Zotz	72.1	3.6	3.2
James Veitenheimer Dairy	70.8	4.2	3.2
Ernie Prescher	70.1	3.7	3.0
Ken Miller	69.6	3.4	3.1
Terry Berend Dairy	68.0	3.8	3.1
Fine-Meadow Farm	66.4	3.4	3.2
3X/Day Milking			
Roy Roy Dairy Inc	76.0	3.6	3.0
Dan Martin Dairies Inc	71.2	3.5	3.3
Clyde Birkenfeld	70.7	3.7	3.3
Hinders Dairy Inc	70.1	3.7	3.3
Jan Berkrens	68.8	3.1	3.3
High Hill Dairy	68.2	3.4	3.3
David Lawrence	66.0	3.4	3.2
Ray Johnston	65.5	3.4	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
Jeff Conrady Dairy	74WDQ3637	H	10-29-92	6.8	23,470	1593
Moer-Milk Dairy	14784082	H	06-06-92	4.3	33,297	1392
Leo Hoff Jr	13951030	H	10-31-89	4.0	32,853	1311
Roy Roy Dairy Inc	74SLJ2028	H	09-11-92	4.3	31,004	1306
Moer-Milk Dairy	74WDN6886	H	06-00-92	3.9	34,546	1300
Arthur & Bryan Hemmi	74TZP7511	H	03-31-90	4.3	30,480	1296
James Veitenheimer Dairy	14128483	H	03-18-89	4.2	30,371	1286
Davidson Dairy Inc	74WDJ0152	H	12-07-90	3.7	35,031	1265
Kenneth Lambert	14556991	H	12-25-89	4.0	31,319	1251
Dan Martin Dairies Inc	74DFK8504	H	07-10-92	3.7	34,855	1249

TEXAS SUMMARY FOR JULY 1995

Information Summarized	7/31/94	6/30/95	7/31/95
DHI-DHIR Herds (cows)	499	472	458
DHI-DHIR Cows	120,193	121,050	118,658
Avg. Milk/Cow/Day	45.7	48.9	45.2
Avg. Percent Fat	3.5	3.5	3.5
Avg. Fat/Cow/Day	1.62	1.74	1.60
Avg. Feed Cost/Cwt. Milk	6.35	5.91	6.26
Private Herds	111	95	91
Private Cows	29,018	27,435	25,966
DHI-DHIR Herds (goats)	21	63	59
DHI-DHIR Goats	399	1089	1007
Total Herds Enrolled	631	630	608
Total Animals Enrolled	149,610	149,574	145,631

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. 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		
Chuck Reiter	69.0	2.38
Ron Clouser	72.2	2.17
Frank Wolf	71.0	2.17
Moer-Milk Dairy	65.5	2.08
Greg Lambert	61.8	2.06
McCatharn North	65.0	2.05
Steve Zotz	70.8	2.03
Ken Miller	67.2	2.01
3X/Day Milking		
David Lawrence	65.0	2.16
Ray Johnston	64.2	2.09
Roy Roy Dairy Inc	68.9	2.06
Harry DeWitt	64.8	1.95
Sun Valley Dairy	62.7	1.95
Dan Martin Dairies Inc	59.4	1.91
Martin Vanbeek	61.9	1.90
Feije & Margriet Terpstra	57.3	1.86

Ranking by Milk

Herd Owner	Milk (lbs)	Fat (%)	Protein (%)
2X/Day Milking			
Ron Clouser	72.2	3.4	3.0
Frank Wolf	71.0	3.4	3.1
Steve Zotz	70.8	4.0	2.9
Chuck Reiter	69.0	5.0	3.5
Ken Miller	67.2	3.4	3.0
Moer-Milk Dairy	65.5	3.6	3.2
McCatharn North	65.0	3.1	3.2
Keith Tiechman	63.4	3.6	3.1
3X/Day Milking			
Roy Roy Dairy Inc	68.9	3.2	3.0
David Lawrence	65.0	3.7	3.3
Harry DeWitt	64.8	3.2	3.0
Ray Johnston	64.2	3.4	3.3
Sun Valley Dairy	62.7	3.4	3.1
Martin Vanbeek	61.9	3.3	3.1
Rio Grande Dairy	61.0	3.6	2.9
Keith Broumley	59.7	.0	.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 July from the Processing Center at Raleigh, North Carolina.

Herd Owner	Cow Identity	Breed	Date of Birth	% Fat	ME Milk	ME Fat
James Veitenheimer Dairy	74WDJ9895	H	06-00-91	4.2	38,802	1589
Terry Berend Dairy	74SBX0865	H	11-05-90	4.9	31,192	1507
James Veitenheimer Dairy	14130750	H	04-24-90	4.9	28,607	1379
Moer-Milk Dairy	13888354	H	06-15-89	4.3	31,536	1340
Bobby J Traweek	13991336	H	11-24-89	4.4	30,746	1333
Moer-Milk Dairy	74SJR1937	H	09-10-92	4.4	30,900	1326
Moer-Milk Dairy	14174542	H	04-07-90	4.6	29,495	1321
Moer-Milk Dairy	74WDD7671	H	11-04-88	4.3	30,631	1318
Indian Ridge	74FER7122	H	03-31-93	4.7	30,871	1314
Moer-Milk Dairy	14011096	H	12-12-89	4.2	31,871	1301