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Dairy Lines

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DAIRY EXTENSION SERVICE NEWS

http://www.oznet.ksu.edu/dp_ansi/dairylin.htm

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Upcoming Events
Kansas & Oklahoma

Dairy Day
October 24
Manhattan, KS
(see inside for details)

Three Times a Day Milking (3×)

by Dennis Armstrong and John F. Smith

The rising cost of facilities per cow, the increase in labor efficiency through parlor mechanization, and higher production per cow have increased the interest in milking 3× to improve the profitability of the dairy enterprise. A response percentage of 3 to 39 percent for cows changed from 2× to 3× milking intervals has been reported in research literature. Management and facilities certainly have an important role in the percentage response to 3× milking. Nutrition requirements for any potential increase in milk production must also be met, with 3× herds being fed three times or more each day. Milking management and milking systems must be of top quality to assure udder health. Walking distance in the lane from the corral or housing area to the milking parlor should not exceed 600 to 700 feet, and group size should not exceed one hour of milking capacity of the parlor. The lack of proper facilities or management can result in a low response to 3× milking frequency.

An additional milking shift will increase labor requirements, although the total time required to milk the same herd size will be approximately 8 to 10 percent less for 3× than 2× herds. For example, a 2× herd which requires eight hours per milking shift will require 8 to 10 percent less on 3× or a milking shift of seven hours. For large dairy herds using hired labor for milking, the organization of the milking shift is less difficult than for smaller farms where family labor is used.

The response to 3× milking also varies by lactation number. In a comparison of seven herds in California in 1986, the increase in milk production for first lactation cows was 19.4 percent, second lactation 13.5 percent, third lactation 11.7 percent, and four or more lactations 13.4 percent. Another California study in 1986 analyzed monthly herd summaries of 28 herds prior to and for the first 36 months after switching to 3× milking and reported a 12 percent increase on 3× milking, with first lactation cows increasing 14 percent in milk yield. In an Arizona study of DHIA records on herds changing from 2× to 3× increased 15 percent in milk yield within 12 months after changing milk frequency. In a Connecticut study in 1977 of six herds which changed from 2× to 3×, milk yield was increased 7 percent for second lactation cows and older, and 11 percent for first lactation cows above their projected 2× yield. British research evaluated 3× milking during the first 20 weeks of lactation and

continued on next page

Heart of America Dairy Herd Improvement Summary (August)

	Quartiles				Your Herd
	1	2	3	4	
Guernsey					
Rolling Herd Average	15,664.5	14,572	13,978.5	11,877	
Peak Milk Yield 1st	60.0	53.0	60.0	49.6	
Peak Milk Yield 2nd	71.5	61.0	57.0	63.3	
Peak Milk Yield 3rd	74.0	68.5	65.0	61.3	
Peak Milk Yield Avg.	67.5	63.0	61.5	58.3	
Income/Feed Cost	1,310	1,196	667	855	
SCC Average	238.5	303	174.5	566.6	
Days to 1st Service	86.5	70	62	80	
Days Open	155	123	142	215	
Projected Calving Interval	14.3	13.25	13.9	16.3	
Holstein					
Rolling Herd Average	22,155	19,182	16,984	13,673	
Peak Milk Yield 1st	77.9	69.05	63.0	53.5	
Peak Milk Yield 2nd	97.4	86.3	77.5	65.3	
Peak Milk Yield 3rd	104.4	93.0	84.1	70.8	
Peak Milk Yield Avg.	92.3	82.7	75.0	64.1	
Income/Feed Cost	1,756	1,501	1,253	936	
SCC Average	337	371	408	496	
Days to 1st Service	88	88	86	75	
Days Open	150	155	161	180	
Projected Calving Interval	14.1	14.3	14.5	15.1	
Jersey					
Rolling Herd Average	15,493	13,705	12,195	9,890	
Peak Milk Yield 1st	54.5	49.3	42.1	42.2	
Peak Milk Yield 2nd	64.4	60.0	55.6	49.0	
Peak Milk Yield 3rd	72.2	62.3	58.5	49.8	
Peak Milk Yield Avg.	62.8	56.4	50.9	47.7	
Income/Feed Cost	1,491	1,151	1,021	627	
SCC Average	329	333	266	405	
Days to 1st Service	85	72	83	62	
Days Open	131	125	142	149	
Projected Calving Interval	13.5	13.3	13.9	14.1	
Milking Shorthorn					
Rolling Herd Average	15,104	13,732	12,720	11,198	
Peak Milk Yield 1st	58.0	54.5	47.0	47.0	
Peak Milk Yield 2nd	71.0	65.0	61.0	57.0	
Peak Milk Yield 3rd	80.0	74.5	73.5	64.5	
Peak Milk Yield Avg.	71.0	64.5	64.0	60.0	
Income/Feed Cost	1,306	1,111	946	745	
SCC Average	175	223	442	41	
Days to 1st Service	77	61	76	43	
Days Open	100	191	152	111	
Projected Calving Interval	12.5	15.5	14.2	12.9	

continued from page 1

reported an increased milk yield of 19 percent for multiple lactation cows and 13 percent for first lactation cows.

The majority of research studies on 3× milking have been to measure milk production. There is less data on the effects of milking on reproduction and udder health, and the data is not conclusive.

A summary of previous research data would indicate that reproduction efficiency may be lower during the first two lactations for 3× milked cows with no effect on later lactation cows. The decrease in reproductive efficiency is very small and in most of the trials was not statistically significant. Cow longevity was evaluated in a California trial, with fewer cows being culled from the herds milking cows 3× versus the 2× herds.

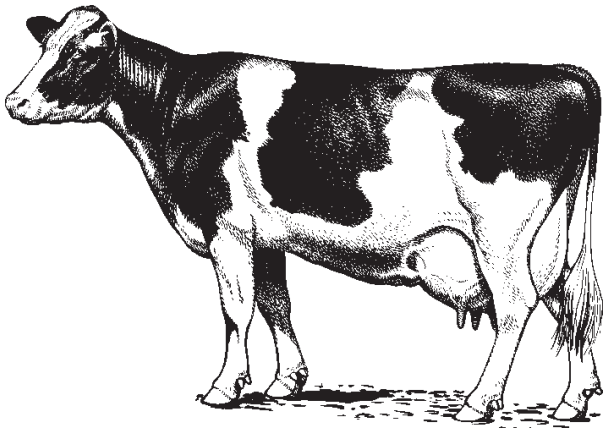
Udder health has not been affected by 3× milking in a number of research trials. A California trial in 1986 reported no difference in California mastitis test scores. When compared to 2× cows in a 1983 trial by Kentucky research workers, somatic cell count was lower and there was no difference in the number of new bacterial infections between 3× and 2× milked cows. Therefore, if a dairy farm has properly installed and maintained milking equipment and acceptable milking practices, no increase in somatic cell count or clinical mastitis should occur.

In conclusion, if herds are well managed 3× milking should increase milk production by 10 to 18 percent, reproduction efficiency in first and second lactation cows may be slightly lower, and somatic cell count and clinical mastitis may be lower. Conversely, in poorly managed herds or herds with inadequate facilities for 3× milking, this may only aggravate existing problems and would not be advantageous.

Congratulations

to the Kansas State Fair 4-H Dairy Quiz Bowl Winners

1. Miami
2. Marshall
3. Douglas
4. Riley
5. Saline
6. Washington



Starting Fresh Cows on Feed

by J. R. Dunham

The most critical feeding period of the production cycle is the first few weeks after calving. It is during this time that fresh cows are going on feed and summit milk yield (SMY) is being set. (Note the relationship between summit milk yield (SMY) and rolling herd average in the quartile comparisons). It also is the time when cows have a tremendous will to milk but not a great appetite. This means that early fresh cows are loosing body weight and have the potential for metabolic problems. Most metabolic problems can be avoided if we can get fresh cows to eat well.

The prepartum feeding program which was discussed in the last issue of Dairy Lines will affect the success of early lactation feeding programs. The goal should be to maximize dry matter intake (DMI) during early lactation.

With the change to TMR feeding programs, many dairy farmers have created a problem for feeding the recently fresh cow. Most TMRs do not provide enough long-stem hay for the recently fresh cow. Fresh cows seem to benefit from some long-stem hay in order to help maintain body fill and prevent displaced abomasum. If possible, provisions should be made for fresh cows to consume 5 to 10 pounds of long-stemmed hay for the first week following calving. In many herds this may require separating recently fresh cows for a few hours each day for feeding hay.

Maximizing DMI is important in the early lactation cow to minimize body weight loss and stimulate high SMYs. In addition, cows will maintain or begin gaining weight earlier in the lactation after they have maximized DMI.

Hay quality has the most effect on DMI. Consumption of low quality hay will be reduced, and the rate digestion of low quality hay will limit DMI. Therefore, try to select the best quality hay for the early lactation cows.

The amount of grain in the ration has an effect on DMI. Since the rate of grain digestion is rapid compared to forage, DMI will be increased when the total ration is composed of up to 55 percent grain. However, there is no advantage in feeding a ration that contains more than 78 to 80 Mcal/100 pounds.

Buffer is extremely important in high energy rations for preventing acidosis. It is even more important for starting recently fresh cows on feed to maintain nearly normal rumen pH. The total dry matter of high energy rations should contain about 0.75 percent buffer.

Feeding adequate amounts of protein is important for stimulating DMI and for increasing SMY. Inadequate protein intake will limit DMI by restricting rumen microbial growth. Adequate amounts of protein are also needed to make milk from the energy source from body weight loss. Usually, early lactation cows will produce better when the ration dry matter is 18 to 18.5 percent protein. The undegradable intake protein (UIP) should be 35 to 40 percent of the intake protein.

You have only one chance each lactation to set the SMY for each cow. Make sure the early lactation ration will maximize DMI and will give each cow the opportunity to produce to her potential.

Hay Prices*—Kansas

	Location	Quality	Price ($/ton)
Alfalfa	Southwestern Kansas	Premium	100–110
Alfalfa	Southwestern Kansas	Good	90–105
Alfalfa	South Central Kansas	Premium	100–115
Alfalfa	South Central Kansas	Good	90–100
Alfalfa	Southeastern Kansas	Premium	100–110
Alfalfa	Southeastern Kansas	Good	90–100
Alfalfa	Northwestern Kansas	Premium	100–110
Alfalfa	Northwestern Kansas	Good	85–90
Alfalfa	North Central Kansas	Premium	100–130
Alfalfa	North Central Kansas	Good	80–100

Source: USDA Weekly Hay Report, *Week ending September 5, 1997*

*Premium Hay RFV = 170–200
Good Hay RFV = 150–170

Hay Prices—Oklahoma

	Location	Quality	Price ($/ton)
Alfalfa	Central/Western, OK	Premium	100–120
Alfalfa	Central/Western, OK	Good	75–100
Alfalfa	Panhandle, OK	Premium	100–120
Alfalfa	Panhandle, OK	Good	75–100

Source: Oklahoma Department of Ag, *July 31, 1997*

Feed Stuffs Prices

	Location	Price ($/ton)
SBM 48%	Kansas City	282.50–287.80
Cotton Seed Meal	Kansas City	207–209
Whole Cottonseed	Memphis	170–175
Meat and Bone Meal	Central United States	257–260
Blood Meal	Central United States	565
Corn Hominy	Kansas City	92–97
Corn Gluten Feed	Kansas City	90–92
Corn Gluten Meal 60%	Kansas City	340–345
Distillers Dried Grain	Central Illinois	120
Brewers Dried Grain	St. Louis	108
Wheat Middlings	Kansas City	69–71

Source: USDA Weekly Feed Stuffs Report, *Week ending September 3, 1997*

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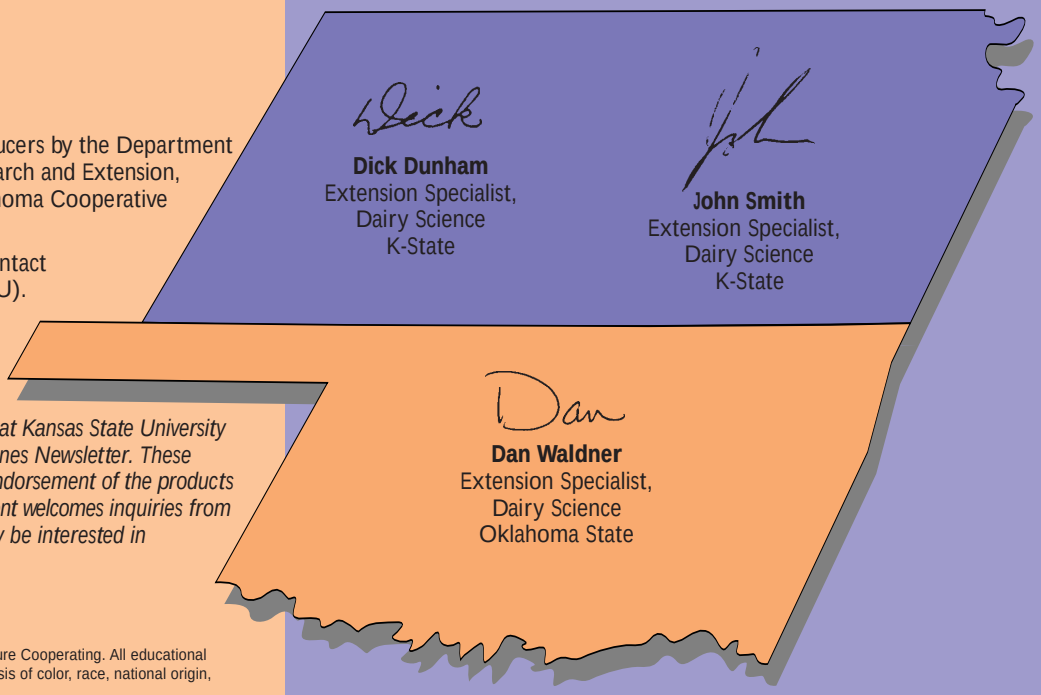
For more information or questions, please contact 913.532.5654 (K-State) or 405.744.6058 (OSU).



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Dairy Lines

DAIRY EXTENSION SERVICE NEWS
K-State Research and Extension
and Oklahoma State University

The 1997 Annual KSU Dairy Day

Friday, October 24, 1997—Pottorf Hall—Cico Park, Manhattan

(From KSU Sports Complex, 1 mi W on Kimball, .4 mi S on Wreath, .2 mi W on Robinson)

8:00 a.m.	Registration—**Visit Exhibits***
	John Shirley, K-State, Program Chairman
9:50 a.m.	Welcome to KSU Dairy Day
	Jack Riley, Head, Animal Sciences and Industry, K-State
10:00 a.m.	Reproduction Management
	J.S. (Jeff) Stevenson, K-State
10:15 a.m.	Managing the Nutrition Program for Cow Comfort
	J.R. (Dick) Dunham, K-State
10:30 a.m.	Cooling Cows in the Summer
	J.F. (John) Smith, K-State
10:45 a.m.	Flushing Manure Systems for Dairy Facilities
	Joe Horner, K-State
11:00 a.m.	Key Note Speaker—Dr. Gordon Jones, Oconto Fall, WI
	Cow Comfort in Freestalls
11:50 a.m.	Lunch, Courtesy of Monsanto ***(Ticket at Registration)***
	********Visit Exhibits********
1:05 p.m.	Quality Milk Awards
	J.R. (Dick) Dunham, K-State
1:20 p.m.	Cow Comfort in Freestalls (continued)
2:10 p.m.	Questions—Dr. Gordon Jones, Oconto Falls, WI
2:30 p.m.	Adjourn—**Visit Exhibits**
3:00 p.m.	Tour—***Dairy Teaching and Research Center***

"A Special Thanks to the Exhibitors who support Dairy Day"

1997 Kansas Quality Milk Awards

(Deadline—October 15)

1997 Kansas Quality Milk Awards Program

Sponsored by:

Kansas State University Agricultural Experiment Station and Cooperative Extension Service
Kansas Mastitis Council, Inc.
Klenzade

The Kansas Mastitis Council, in cooperation with Kelnzade, is sponsoring an awards program to recognize Kansas producers.

Requirements

Contestants must fill out the entry form, showing the SCC, Bacteria (SPC) and Antibiotic tests for the period of August 1, 1996, through July 31, 1997. Four tests are required during any 6-month period.

Awards

The competition will be divided into three divisions according to herd size:
Large—81 or more cows; Medium—50–80 cows; Small—49 or fewer cows.

- ☆ Lowest yearly average SCC and bacteria count in all divisions will receive a plaque.
- ☆ Second lowest yearly average SCC and bacteria count in all division will receive a plaque.
- ☆ Third lowest yearly average SCC and bacteria count in all divisions will receive a plaque.
- ☆ **Certificates of Merit** will be presented to all entrants with an average SCC under 300,000 and bacteria counts averaging 10,000 or less.

Entry Form
1997 Kansas Quality Milk Awards

Month	Year	SCC	Bacteria	Antibiotics	Total Cows*
August	1996				
September	1996				
October	1996				
November	1996				
December	1996				
January	1997				
February	1997				
March	1997				
April	1997				
May	1997				
June	1997				
July	1997				

*Include dry cows in total.

Name _____

Address _____

_____

Phone ( ) _____

Send results on this form to:

Dr. J. R. Dunham
Call Hall, KSU
Manhattan, KS 66506–1600
Entry Deadline: October 15, 1997