August 1998

Dairy Lines

Volume 4, Number 8

DAIRY RESEARCH & EXTENSION NEWS

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

Co-Editors

John F. Smith
Extension Specialist, Dairy Science

Dan Waldner
Extension Specialist, Dairy Science

Contributors

Karen Schmidt
Associate Professor, Dairy Products

John Shirley
Associate Professor, Dairy Science

Jeff Stevenson
Professor, Dairy Science

Dave Sukup
Manager, Heart of America DHI

Upcoming Events

September 4
Heat Stress Field Day
Meier Dairy
Palmer, Kansas

September 18-22
State Fair of Oklahoma Dairy Cattle Show
Youth Dairy Judging Contest
9 a.m.—Sept. 19
Oklahoma City

September 24-27
Tulsa State Fair
Youth Dairy Judging Contest
9 a.m.—Sept. 26
Tulsa

Kansas State University
Research and Extension

OSU
OKLAHOMA COOPERATIVE EXTENSION SERVICE

Printing sponsored by

MONSANTO
Food • Health • Hope™

Research Update from the 1998 American Dairy Science Association Meeting

Compiled by: Dan N. Waldner, OSU Extension Dairy Specialist

Effects of feeding soy hulls in transition cow diet on lactation and performance of Holstein dairy cows.

J.P. Underwood, J.N. Spain, and M.C. Lucy, Univ. of MO, Columbia;

Forty-eight dairy cows were used to determine the effects of partial replacement of long-stemmed grass hay with soy hulls in the transition diet. The four treatments consisted of 0%, 15%, 30% or 45% replacement of grass hay with soy hulls. Cows were fed the experimental diets 21 days prior to calving then fed the same total mixed production diet after calving up to one week post breeding.

Results showed that dry matter intake of the control diet was lower one week prepartum compared to the 15, 30 and 45% soy hull diets (15.5 pounds versus 18.6, 20.6 and 23 pounds, respectively). There was no difference due to diet in dry matter intake after calving. Cows fed the control diet lost more body condition prior to calving than the cows fed the 30% diet. Control cows produced more milk fat in the first two weeks of lactation than the 45% cows with no overall effect among groups. There was no difference in milk protein. Cows fed the 30% diet peaked earlier and had a higher peak milk yield than the control and 45% group (82.9 pounds versus 78.9 and 75.2 pounds).

The researchers concluded that partial replacement of 30% of forage with soy hulls in the prepartum diet improved dry matter intake preceding parturition and reduced body condition loss, which subsequently improved lactation performance.

With the drought and shortage of grass hay, producers may need to stretch forage supplies this year. Replacement of forage with soy hulls in the transition cow ration may provide a strategy to help stretch forage supplies while maintaining production. Additionally, soy hulls may help improve rations containing extremely low quality grass hay, regardless of the supply on hand.

Bovine somatotropin does not compromise reproductive performance of Holstein cows.

J.L. Dominguez, University of Arizona, Tucson.

Some dairy producers resist using bovine somatotropin (bST) before 120 days post-calv-

continued on page 2

Heart of America Dairy Herd Improvement Summary (July)

	Quartiles				Your Herd
	1	2	3	4	
Ayrshire					
Rolling Herd Average	15,311	14,204	13,252	10,270	
Peak Milk Yield 1st	56.5	49.0	50.0	40.0	
Peak Milk Yield 2nd	70.0	62.5	59.5	51.3	
Peak Milk Yield 3rd	78.0	64.5	65.5	60.5	
Peak Milk Yield Avg.	69.0	57.5	58.5	49.3	
Income / Feed Cost	963	788	1,013.5	341	
SCC Average	218.5	340	397	346	
Days to 1st Service	76	73.5	58.5	85	
Days Open	140.5	135.0	110.5	167	
Projected Calving Interval	13.8	13.6	12.8	14.7	
Brown Swiss					
Rolling Herd Average	19,365	15,700	14,403	13,742	
Peak Milk Yield 1st	66.6	54.8	51.0	51.5	
Peak Milk Yield 2nd	85.6	69.6	63.8	65.1	
Peak Milk Yield 3rd	91.2	74.8	72.8	69.5	
Peak Milk Yield Avg.	82.4	68.3	63.4	63.3	
Income / Feed Cost	1,319	1,245	952	937	
SCC Average	306	317	306	236.5	
Days to 1st Service	75	92.5	82	88	
Days Open	139	145	165	138	
Projected Calving Interval	13.7	13.9	14.6	13.7	
Guernsey					
Rolling Herd Average	16,115	15,164	12,991	11,501	
Peak Milk Yield 1st	61.0	58.0	49.5	50.5	
Peak Milk Yield 2nd	74.0	67.5	55.5	51.0	
Peak Milk Yield 3rd	69.0	73.0	60.5	57.5	
Peak Milk Yield Avg.	67.0	67.0	55.5	53.5	
Income / Feed Cost	1,579	1,325	1,106	328	
SCC Average	135	222.5	608	404	
Days to 1st Service	93	42.5	32	46	
Days Open	147	167	205.5	227	
Projected Calving Interval	14.1	14.7	16.0	16.7	
Holstein					
Rolling Herd Average	22,344	19,451	17,432	14,251	
Peak Milk Yield 1st	78.8	69.5	63.9	54.4	
Peak Milk Yield 2nd	96.2	85.4	77.4	65.8	
Peak Milk Yield 3rd	102.1	91.6	83.3	71.2	
Peak Milk Yield Avg.	91.9	82.5	75.5	65.4	
Income / Feed Cost	1,679	1,373	1,186	921	
SCC Average	325	337	377	437	
Days to 1st Service	88.5	89	85	76	
Days Open	156	155	160	182	
Projected Calving Interval	14.3	14.3	14.5	15.2	
Jersey					
Rolling Herd Average	15,739	13,289	11,841	9,651	
Peak Milk Yield 1st	54.8	47.8	41.9	39.9	
Peak Milk Yield 2nd	65.0	58.7	53.5	43.7	
Peak Milk Yield 3rd	71.5	62.0	56.3	48.3	
Peak Milk Yield Avg.	64.2	57.6	50.5	45.1	
Income / Feed Cost	1,411	996	846	474	
SCC Average	303	338	227	383	
Days to 1st Service	85.5	78	77	65	
Days Open	124	128	134.5	183	
Projected Calving Interval	13.2	13.4	13.6	15.2	

Research Update continued from page 1

ing because of the concern that fertility is compromised. Therefore, a trial was conducted to evaluate reproductive performance of Holstein cows in two high producing herds in Arizona and Southern California. Rolling herd averages for both herds for milk production exceeded 23,500 pounds / year. Data were collected for cows calving December 1996 through May 1997. A total of 106 cows were used in the study. The voluntary waiting period was 60 days post-calving, with cows randomly assigned to receive bST or no treatment (controls). In the 180-day interval after calving, 77% (41 / 53) of the control cows were diagnosed pregnant. With the bST treat cows, 72% (38 / 53) were pregnant in that same interval. Analysis indicated that conception rates did not differ significantly between treatment groups. Services per conception were similar for the two treatments. Therefore, the researcher concluded that fertility of high producing cows was equivalent between non-bST treated cows and cows treated with bST according to label guidelines.

Cow preference for filler materials in stall mattresses.

E.H. Shim, R.D. Shanks, and G.C. McCoy, Univ. of IL, Urbana.

The preference of cows to different filler materials and sand in freestalls may indicate greater comfort, which may contribute to improved health and productivity.

Double layered mattresses were randomly installed in 123 of the 164 freestalls at the University of Illinois Dairy Unit. The remaining 41 stalls, randomly distributed throughout the five barns, used sand as the stall surface. Three types of filler material were used in the mattresses: rubber, plastic and mixed (50% rubber, 50% plastic). Thirteen 24-hour recording periods (approximately every two to three weeks) were conducted to determine cow preference. Each stall was recorded hourly as empty, cow lying, cow standing, cow backwards, or cow half in stall. Cows significantly differentiated between materials when lying down and choosing which stall to occupy. Cows were lying down in stalls with rubber filled mattresses 43.4(1.3% of the watch period, 39.5(1.3% on mixed, 33.5(1.3% on plastic, and 26.4(1.3% on sand. Stalls with rubber filled mattresses were occupied 55.1(1.4% of the watch period, 51.9(1.5% on mixed, 45.3(1.5% on plastic, and 35.3(1.5% on sand.

Cow preference ranked rubber filled mattresses first, then mixed, followed by plastic, with mattresses preferred over sand.

Investigation of brown midrib sorghum silage in diets of lactating dairy cattle.

G. Aydin, Univ. of NE, Lincoln.

Sixteen Holstein cows were assigned to four diets to compare the effect of brown midrib (BMR) sorghum silage with alfalfa, corn, and normal sorghum silages on lactation performance. Diets contained equal amounts of protein and were fed as total mixed rations that contained 65% silage (dry matter basis). Dry matter intake was greater for the corn (55.7 pounds / day) and alfalfa (52.8 pounds / day) than for the BMR (49.9 pounds / day) and

normal sorghum (47.3 pounds / day) diets. The production of 4% fat-corrected-milk was highest for the corn diet (63.8 pounds / day) and lowest for the normal sorghum diet (44.9 pounds / day). The production of milk fat, milk protein and lactose was significantly lower for the normal sorghum diet than for the other diets.

The researcher concluded that BMR sorghum resulted in significantly better production of fat-corrected-milk compared with the normal sorghum silage.

Effect of live yeast culture supplementation on dry matter intake and milk production of transition cows.

N.L. Woodward, J.A. Shelford, L.J. Fisher, N.E. Dinn, J. Baah and K.J. Cheng, Univ. of B. C., Canada.

A decline of 30-35% in feed intake is common during the transition period in dairy cows. This usually results in failure of the animals to meet their increased requirements for nutrients in early lactation. The inability of cows to meet their requirements can result in postpartum health problems and compromise performance. There are indications feeding live yeast cultures (LYC) of Saccharomyces cerevisiae to cows in early lactation may increase both dry matter intake and milk production.

The objective of this study was to determine if LYC fed to cows both pre- and postpartum could result in increased dry matter intake and milk production. Thirty cows were paired, based on age, body weight and previous year 305-day milk production, and randomly assigned to one of two dietary treatment groups, A (control) and B (LYC supplemented). Cows in group B were fed yeast at 0.2% of estimated dry matter intake from one week prior to calving until 14 days postpartum. Preliminary results indicated differences between groups A and B for both daily dry matter intake (A=40.6 lbs. / day vs. B=41.4 lbs. / day) and milk production (A=68.0 lbs. / day vs. B=73.7 lbs. / day) during the first 14 days of lactation. Daily milk yield from day 15 to 75 also differed between groups A and B (86.0 lbs. / day vs. 101.4 lbs. / day). The researchers concluded that supplementation with LYC during the transition period improves dry matter intake and milk production.

Hay Prices*—Kansas

	Location	Quality	Price ($/ton)
Alfalfa	Southwestern Kansas	Premium	75–85
Alfalfa	Southwestern Kansas	Good	60–70
Alfalfa	South Central Kansas	Premium	80–95
Alfalfa	South Central Kansas	Good	70–85
Alfalfa	Southeastern Kansas	Premium	85–100
Alfalfa	Southeastern Kansas	Good	75–85
Alfalfa	Northwestern Kansas	Premium	90
Alfalfa	Northwestern Kansas	Good	80–90
Alfalfa	North Central Kansas	Premium	85–100
Alfalfa	North Central Kansas	Good	80–85

Source: USDA Weekly Hay Report, *Week ending August 4, 1998*

*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	80–90
Alfalfa	Panhandle, OK	Premium	90–110
Alfalfa	Panhandle, OK	Good	80–90

Source: Oklahoma Department of Agriculture, *July 30, 1998*

Feed Stuffs Prices

	Location	Price ($/ton)
SBM 48%	Kansas City	157.90–169.90
Cotton Seed Meal	Kansas City	159–160
Whole Cottonseed	Memphis	150
Blood Meal	Central United States	386–390
Corn Hominy	Kansas City	75–85
Corn Gluten Feed	Kansas City	60–65
Corn Gluten Meal 60%	Kansas City	255–265
Distillers Dried Grain	Central Illinois	80–82
Brewers Dried Grain	St. Louis	NA
Wheat Middlings	Kansas City	57–61

Source: USDA Weekly Feed Stuffs Report, *Week ending August 5, 1998*

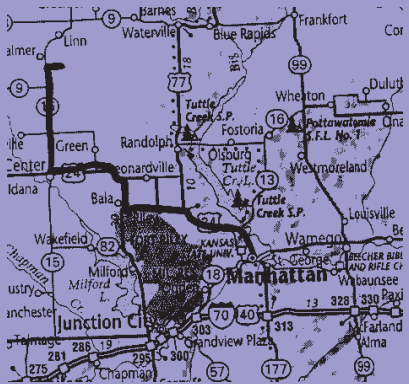
Oklahoma Cooperative Extension Service (OCES) - Hay Clearinghouse

Due to the drought conditions in Oklahoma the OCES has set up a clearinghouse of information on producers with hay to sell. If you need to purchase hay or have hay to sell contact your county extension office for assistance.

Heat Stress Field Day • Meier Dairy Inc. • Palmer, Kansas

10:00 a.m. Registration
10:30 a.m. Oral Presentations
John Smith, Joe Harner, Matt Meyer, K-State Research and Extension
12:00 Ventilation Demonstration
1:00 Lunch provided by Monsanto*

Directions from Manhattan
Take Hwy 24 west to the Riley corner (10 miles). Take Hwy 77 south (still Hwy 24 west). Once on Hwy 77, do not take Hwy 24 north to Leonardville. Continue on Hwy 77 to 82 east (9 miles). Hwy 82 east will take you due north for 4.5 miles, where you will meet Hwy 24 again. Take Hwy 24 west for 11.5 miles to Hwy 15 north in Clay Center. Take Hwy 15 north for 15.5 miles. At the St. John Lutheran Church sign on the east side of the road, take the county road east for 2.5 miles. Meier Dairy, INC., is on top of the hill just past the large white church.



***Please RSVP to Brandy Nowakowski at 785-532-1281 if you plan to have lunch.**

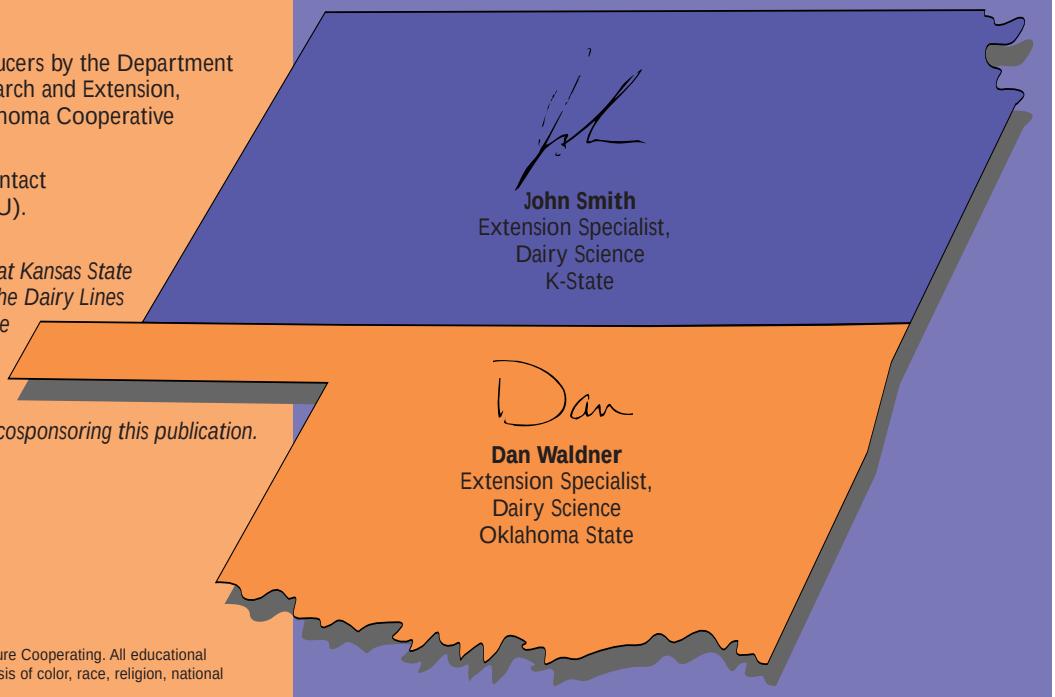
Department of Animal Sciences and Industry
139 Call Hall
Manhattan, KS 66506

Dairy Lines is jointly published for dairy producers by the Department of Animal Sciences and Industry, K-State Research and Extension, and the Department of Animal Science, Oklahoma Cooperative Extension Service.

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

The Department of Animal Sciences and Industry at Kansas State University greatly appreciates the sponsor(s) of the Dairy Lines Newsletter. These sponsorships in no way imply the Department's endorsement of the products and services offered by the sponsors. The Department welcomes inquiries from other individuals, associations and firms that may be interested in cosponsoring this publication.

Kansas State University
Cooperative Extension Service
Department of Animal Sciences and Industry
Call Hall, Room 139
Kansas State University
Manhattan, Kansas 66506



John Smith
Extension Specialist,
Dairy Science
K-State

Dan Waldner
Extension Specialist,
Dairy Science
Oklahoma State

Dairy Lines

DAIRY RESEARCH AND EXTENSION NEWS
K-State Research and Extension
and Oklahoma State University