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Dairy Lines

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DAIRY RESEARCH & EXTENSION NEWS

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Co-Editors

John F. Smith
Dairy Specialist

Dan Waldner
Dairy Specialist

Mike Brouk
Dairy Specialist

Contributors

Karen Schmidt
Professor, Dairy Products

John Shirley
Professor, Dairy Science

Jeff Stevenson
Professor, Dairy Science

Dave Sukup
Manager, Heart of America DHI

Upcoming Events

KSU Dairy Days
10:15 a.m. to 3 p.m.

November 13
Seneca, Valentino's
David Key, 785-336-2184

November 14
Whiteside
Amish Community Bldg.
Greg McCormack
620-662-2371

November 15
Franklin County Fair Grounds
Celebration Hall, 1737 S. Elm
Darren Hibdon, 785-229-3520

Topics and speakers, page 3.

K-STATE Kansas State University

OSU OKLAHOMA COOPERATIVE EXTENSION SERVICE

Research Update

Highlights from American Dairy Science Meeting

Dairy expansion considerations

This paper described key issues that managers should consider before making a decision to expand a dairy operation. The study focused on *initial expanders*, those without previous expansion experience. The key issues considered in the paper were synthesized from a case study of 20 dairy farm expansions in the Upper Midwest. The majority of successful operations in the case study expanded for economic reasons. While previous expansion experience was nearly perfectly correlated with expansion success in the case study, working with an expansion consultant improved the initial expander's probability of success.

Key expansion management skills identified in the case study included human resource, operations, financial, herd, strategic and public relations management. Managers who do not possess these skills should consider taking coursework, hiring the expertise, or partnering with other managers who do. Initial expanders should consider different expansion options.

When modernization occurred with expansion, the expansions were more successful from a production, herd health and financial perspective than expansions that added to antiquated facilities. Initial expanders should also be flexible in sizing their expansion. Many of the initial expanders in the case study originally planned to expand to a smaller herd size. After conducting feasibility studies, these managers found that the smaller expansions were not financially viable. A second size consideration is to make sure that the herd is large enough to fully compensate all managing partners for their labor, capital and management. For the fourteen farms choosing to report financial information, thirteen posted positive net farm incomes the first two years following expansion. Unfortunately, only two fully compensated their owners for the unpaid labor, capital and management.

G. Hadley, C. Wolf, and S. Harsh. Univ. of Wisconsin - River Falls, Agric. Economics Dept., Michigan State Univ., Dept. of Agric. Economics. J. Dairy Sci. Vol 85, Suppl.1. pp. 180.

Cooling during the dry period increases milk production

Twenty-four multiparious Holstein cows were blocked by body condition score and assigned to one of two treatments 60 days before their anticipated calving date. The treatments were: (1) no cooling system, and (2) with a cooling system based on fans with water spray. The cooling system operated from 10 a.m. to 6 p.m. daily during the entire dry period of the cows, which consisted of the hot summer months (extreme low and high temperatures of 66°F and 118°F. Cows were fed a total mixed ration twice daily at 7 a.m. and 5 p.m. Rectal temperatures and respiration rates were recorded twice daily at 9:30 a.m. and 2:30 p.m. on Tuesday and

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We Need Your Help

Beginning with the next issue, *Dairy Lines* will be distributed in an electronic format due to a severe reduction in our budget. This will help us reduce publication costs and allow quick access to the newsletter. For those who do not have e-mail, a printed version will still be available.

To receive the newsletter via e-mail, please contact Tamie Redding at tredding@oznet.ksu.edu or 785-532-1280, and you will be added to the electronic newsletter list.

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Friday of every week and body condition was scored on the same days. After calving, all cows were moved to the same pen, which had shade but no fans or misters, and fed a ration appropriate for cows in early lactation. Cows were milked twice daily at 5 a.m. and 5 p.m. Milk yield was recorded weekly through week eight. During the dry period, when cows were cooled or not cooled, there were no treatment differences in respiration rates or rectal temperatures at 9:30 a.m. However, cooled cows had lower respiration rates and lower rectal temperatures at 2:30 p.m. Cooled cows had higher milk production (57.4 vs. 53.6 lbs). Results show that cooling dry cows using fans with water spray reduced heat stress under these conditions, as indicated by afternoon respiration rates and rectal temperatures, and resulted in higher milk production during the subsequent lactation when cows were treated identically and not cooled.

L. Avendano-Reyes, D. Alvarez-Valenzuela, S. Saucedo-Quintero, A. Correa-Calderon, F. Rivera-Acuna, and P. Robinson Universidad Autonoma de Baja California, Mexicali, Mexico, 2UCCE, Dept of Anim. Sci., UC Davis, Davis, CA. J. Dairy Sci. Vol 85, Suppl.1. pp. 27.

Two coliforms mastitis vaccination schedules

Late-lactation cows and springing heifers from two research herds were enrolled two weeks before drying off and randomly assigned to one of two vaccination protocols. Group A involved vaccination at dry-off, three weeks before expected calving, and 2 to 9 days in milk. Group B cows were vaccinated two weeks before dry-off, at dry-off and at three weeks before expected calving. Daily milk weights were recorded from enrollment until the day of drying off, as well as for the first 30 days of the next lactation. Quarter milk samples were aseptically collected once from day 2 to 9 days in milk for bacteriological culture. After calving, dry matter intakes were recorded for all cows during the period from the day before to the two days after the Group A vaccination date. Descriptive data from the first 141 cows that have completed the trial are summarized.

The mean decline in milk production over the two-week period prior to dry-off was -26.0 lbs and -30.0 lbs for Group A and Group B, respectively. This difference was not statistically significant. Milk production on the day before dry-off in Groups A and B was 26.5 lbs and 26.9 lbs, respectively. After calving, the average milk production at 30 days in milk was 82.7 lbs (Group A) and 83.3 lbs (Group B). On the day of vaccination for Group A after calving, dry matter intake values were 26.0 lbs and 28.7 lbs for Group A and B, respectively. Daily milk production on this date was found to be 58.4 lbs (Group A) and 60.6 lbs (Group B). Results of milk bacteriology from 656-quarter samples have isolated major pathogens from 29 (Group A) and 14 (Group B) quarters. E. coli, Klebsiella and environmental Streptococci were found in 12, 3 and 10 versus 3, 1 and 5 of the quarters from animals in Groups A versus B, respectively. Preliminary results favor coliform mastitis vaccination at two weeks before, at dry-off and at transition.

C.S. Petersson, K.E. Leslie1, D.F. Kelton, and B.A. Mallard. Dept. of Population Medicine, Dept. of Pathobiology, Univ. of Guelph, Ontario, Canada. J. Dairy Sci. Vol 85, Suppl.1. pp. 84.

Impact of intramammary treatment of CMT-positive on early postpartum dairy cows

All quarters (1,781 quarters) from each cow (489 head) were tested on 23 dairy herds using the California Mastitis Test (CMT) between calving and day 3 in milk, and sampled aseptically for milk bacteriology. A CMT score greater than 0 was considered positive. Cows with a positive CMT were randomly assigned to receive either the label dose of intramammary cephapirin sodium (Cefa-Lak) or no treatment. All CMT positive cows were sampled for bacteriological culture on two more occasions (10 to 16 days in milk and 17 to 23 days in milk) to determine cure of infections. Outcomes evaluated included the effect of treatment on cure for major pathogens and the effects of treatment on linear score and milk production for the first three DHI tests post calving. The sensitivity (56%) and specificity (86%) of CMT for detecting cows infected with major pathogen infections was relatively good, although the test characteristics varied among farms; particularly in relation to the rate of intramammary infections in fresh cows. There was a significant difference in cure rates for major pathogens, especially for the environmental streptococci between the 135 treated quarters and the 186 controls. Overall, cows with a CMT of 3 had a higher linear score. Treated cows were 3.6 times more likely to cure a major pathogen infection. Cows that cured a major pathogen had a lower linear score on the third test date. As linear score increased, milk production decreased. There was a trend in the data that indicated that untreated cows with high CMT score at calving (score 2 or 3), had lower milk production on the first test day, whereas this affect was not present in treated cows with a high CMT score. In conclusion, early antibiotic treatment of CMT positive quarters had a significantly greater cure rate than controls, particularly with the environmental pathogens.

J.A. Wallace, K. Stipetic, K.E. Leslie, R.T. Dingwell, Y.H. Schukken, and P. Baillargeon. University of Guelph, Dept. of Population Medicine, Cornell Univ., Clinique de St-Louis/Embryobec. J. Dairy Sci. Vol 85, Suppl.1. pp. 85.

The effects of cutting height, hybrid and stage of maturity at harvest on the nutritive value of corn silage for lactating dairy cows

Three leafy corn silage hybrids (TMF 100, 108 and 2404, Mycogen Seeds) were harvested at cutting heights of 5 inches (normal-cut) and 18 inches (high-cut) at 1/2 milkline and black layer and ensiled in laboratory silos. Increasing the height of cutting lowered yields of harvested dry matter per acre by approximately 10%. The concentration of dry matter (38.6 vs. 36.6%) and starch (34.4 vs. 32.4%) were higher, but the concentrations of crude protein (8.29 vs. 8.43%) and ADF (23.4 vs. 25.3%) were lower in high-cut than in normal-cut silage. The concentrations of NDF and lactic acid tended to be lower in the high-cut (41.3% and 4.23%) than the normal-cut (42.9% and 4.41%), respectively. The concentration of acid detergent lignin was also lower in high-cut (2.42 vs. 3.27%) silage, but only in corn harvested at 1/2 milkline. In vitro digestion of NDF was greater in high-cut (50.7%) than normal-cut (48.3%) silage. Calculated yield of milk per ton of forage dry matter was greater for high-cut than for normal-cut silage harvested at 1/2 milkline but not at black layer. When fed to lactating dairy cows, high-cut corn silage resulted in tendencies for greater NDF digestion in the total tract (34.3 vs. 31.8%), higher milk production (+3.3 lbs per day), and improved feed efficiency. Results from this study suggest that increasing the cutting height of whole plant corn at harvest can improve nutritive value of corn silage for lactating dairy cows.

J.M. Neylon, T.L. Ebling1, C.C. Taylor, M.P. Lynch1, M.A. Reddish, M.I. Endres, and L. Kung, Jr. 1Univ. of Delaware, Newark, Mycogen Seeds, Egan, MN. J. Dairy Sci. Vol. 85, Suppl.1. pp. 383.

Heart of America Dairy Herd Improvement Summary

	Quartiles 1	2	3	4	Your Herd
Ayrshire					
Rolling Herd Average	18,775	15,638	14,077	9,587	
Summit Milk Yield 1st	63.0	55.0	51.5	—	
Summit Milk Yield 2nd	35.0	70.5	59.5	—	
Summit Milk Yield 3rd	32.0	70.5	72.5	56.0	
Summit Milk Yield Avg.	63.0	66.0	61.0	56.0	
Income/Feed Cost	1,393	849	886	—	
SCC Average	157	269	445	162	
Days to 1st Service	31	35	33	—	
Days Open	83	114	156	53	
Projected Calving Interval	12.0	12.9	14.3	6.3	
Brown Swiss					
Rolling Herd Average	19,666	17,094	15,705	12,587	
Summit Milk Yield 1st	61.2	56.0	51.4	43.4	
Summit Milk Yield 2nd	79.2	71.6	68.8	58.2	
Summit Milk Yield 3rd	84.0	60.4	71.8	64.0	
Summit Milk Yield Avg.	76.0	66.0	64.4	57.6	
Income/Feed Cost	1,732	1,704	1,274	1,100	
SCC Average	345	337	380	355	
Days to 1st Service	84	56	97	47	
Days Open	156	150	175	249	
Projected Calving Interval	14.3	14.1	15.0	17.4	
Guernsey					
Rolling Herd Average	19,786	14,541	13,284	13,000	
Summit Milk Yield 1st	55.0	47.6	47.0	48.6	
Summit Milk Yield 2nd	36.0	56.3	58.5	55.0	
Summit Milk Yield 3rd	79.0	60.0	60.0	58.6	
Summit Milk Yield Avg.	69.5	55.0	56.0	54.3	
Income/Feed Cost	1,519	1,094	1,060	1,093	
SCC Average	261	246	266	374	
Days to 1st Service	92	96	118	113	
Days Open	176	189	220	204	
Projected Calving Interval	15.0	15.4	16.4	15.9	
Holstein					
Rolling Herd Average	23,296	20,283	18,012	14,811	
Summit Milk Yield 1st	74.4	66.9	61.1	52.8	
Summit Milk Yield 2nd	95.5	85.7	75.4	64.1	
Summit Milk Yield 3rd	100	90.7	82.4	70.4	
Summit Milk Yield Avg.	88.5	80.3	73.3	64.2	
Income/Feed Cost	2,026	1,634	1,428	1,074	
SCC Average	355	384	399	547	
Days to 1st Service	88	94	95	95	
Days Open	171	173	180	214	
Projected Calving Interval	14.8	14.9	15.1	16.2	
Jersey					
Rolling Herd Average	17,888	14,755	13,186	10,876	
Summit Milk Yield 1st	56.2	45.3	47.1	43.9	
Summit Milk Yield 2nd	69.5	61.3	56.1	49.8	
Summit Milk Yield 3rd	74.1	60.1	60.6	53.5	
Summit Milk Yield Avg.	66.3	59.1	55.5	49.0	
Income/Feed Cost	1,889	1,539	1,138	981	
SCC Average	282	307	437	446	
Days to 1st Service	83	78	87	117	
Days Open	152	140	154	170	
Projected Calving Interval	14.2	13.8	14.2	14.8	
Milking Shorthorn					
Rolling Herd Average	16,665	15,108	13,873	10,352	
Summit Milk Yield 1st	53.5	57.0	24.5	48.0	
Summit Milk Yield 2nd	33.5	65.5	68.0	58.0	
Summit Milk Yield 3rd	81.0	74.5	78.5	47.5	
Summit Milk Yield Avg.	70.0	65.5	71.5	53.5	
Income/Feed Cost	1,283	1,196	1,083	581	
SCC Average	345	162	249	318	
Days to 1st Service	78	54.0	81	116	
Days Open	118	250	137	153	
Projected Calving Interval	13.1	17.4	13.7	14.2	

Hay Prices—Kansas*

	Location	*Quality*	*Price ($/ton)*
Alfalfa	Southwestern Kansas	Supreme	115-130
Alfalfa	Southwestern Kansas	Premium	105-120
Alfalfa	Southwestern Kansas	Good	—
Alfalfa	South Central Kansas	Supreme	110-120
Alfalfa	South Central Kansas	Premium	100-110
Alfalfa	South Central Kansas	Good	—
Alfalfa	Southeastern Kansas	Supreme	105-110
Alfalfa	Southeastern Kansas	Premium	95-105
Alfalfa	Southeastern Kansas	Good	—
Alfalfa	Northwestern Kansas	Supreme	100-120
Alfalfa	Northwestern Kansas	Premium	100-110
Alfalfa	Northwestern Kansas	Good	90-100
Alfalfa	North Central Kansas	Supreme	100-135
Alfalfa	North Central Kansas	Premium	100-110
Alfalfa	North Central Kansas	Good	—

Supreme = over 180 RFV (less than 27 ADF)
Premium = 150–180 RFV (27–30 ADF)
Good = 125–150 RFV (30–32 ADF)

Source: USDA Kansas Dept. of Ag Market News Service Report, September 27, 2002

Hay Prices—Oklahoma

	Location	*Quality*	*Price ($/ton)*
Alfalfa	Central/Western, OK	Premium	100-120
Alfalfa	Central/Western, OK	Good	85-95
Alfalfa	Panhandle, OK	Premium	—
Alfalfa	Panhandle, OK	Good	—

Source: Oklahoma Department of Ag-USDA Market News Service, September 26, 2002

Feed Stuffs Prices

	Location	*Price ($/ton)*
Blood Meal	Central US	440-465
Corn Gluten Feed	Kansas City	73-76
Corn Gluten Meal	Kansas City	275-285
Corn Hominy	Kansas City	85-96
Cotton Seed Meal	Kansas City	173-180
Whole Cotton Seed	Memphis	115
Distillers Grains	Nebraska	106-115
Pork—Meat and Bone Meal	Texas Panhandle	170
SBM 48%	Kansas City	180-189
Wheat Middlings	Kansas City	73-76

Source: USDA Market News Service, September 27, 2002

K-State Dairy Days

10:15 a.m.to 3 p.m.

Nov. 13 – Seneca, Valentino's
Nov. 14 – Whiteside, Amish Community Bldg.
Nov. 15 – Franklin County Fairgrounds
Celebration Hall, 1737 S. Elm

- Changes in Federal Milk Marketing Orders, Don Nichols or David Struckenberg
- Update of Nutritional Research at KSU, John Shirley
- Effective Cooling Strategies for Dairy Cattle, Mike Brouk
- Tips on Soaker Line Construction, John Smith
- Use of the CIDR Insert for Synchronization of Estrus in Heifers, Jeff Stevenson

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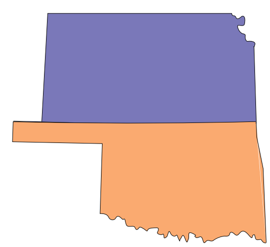

Kansas State University
K-State Research & Extension
Department of Animal Sciences and Industry
Call Hall, Room 139
Kansas State University
Manhattan, Kansas 66506

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John Smith
Extension Specialist
Dairy Science, K-State

Mike Brouk
Extension Specialist
Dairy Science, K-State

Dan Waldner
Extension Specialist
Dairy Science, Oklahoma State

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