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Dairy Lines

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KANSAS DAIRY EXTENSION NEWS

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Upcoming Events

Dairy Herd Health Meetings
10 a.m.–2:30 p.m.
Jan. 15
Amish Community Bldg.
Hutchinson, KS
Jan. 16
Valentino's
Seneca, KS
Jan. 17
Franklin Co. Ext. Off.
Ottawa, KS

Area DHIA Meetings
10:00 a.m.–3:00 p.m.
Feb. 1–2, 5–8
Look on page 4 for details.

The Nutrition Program

Managing Feed Costs

by J.R. Dunham

Selecting ration ingredients is an important step in managing feed costs. With higher than normal ingredient prices, this year is a good time to evaluate the potential for including by-products in the feeding program. Feeding less feed or lower quality forages is usually not a good choice to improve profitability.

Each issue of Dairy Lines will list the market prices of certain by-products that may lower feed costs while maintaining production. These prices are shown inside this issue. Check with local suppliers for the availability and local prices. Also, work with your nutritionist to determine how certain by-products may be included in the feeding program.

Dairy Lines will also list the market prices for alfalfa hay at different localities in Kansas. Although high quality alfalfa hay seems expensive, there is no substitute for quality forages in a feeding program.

Total dry matter intake is a the most limiting factor in many dairy feeding programs. Since forage quality has the greatest effect on rate of passage of feeds

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"Feed costs may be reduced by selecting by-products. Feed costs should be reduced by selecting lower cost ingredients rather than feeding less."
—J.R. Dunham

The Reproduction Program

Seasonal Fluctuations in Conception

by J.S. Stevenson and J.F. Smith

Questions about seasonal fluctuations in conception rate are often asked. Many have experienced lower conception rates in the lactating cow herd during this past summer and early fall of 1995. We have monitored this seasonal pattern in our 200-cow herd at K-State since June, 1983. Figure 1 illustrates the monthly conception rate for lactating cows combined with that of replacement heifers during the 12-year period in comparison to that observed for 1995. Typically, conception rates are lowest in July, August and September. The best conception rates have been obtained in March and April.

This year's fertility is following very closely what has occurred in 12 previous years in

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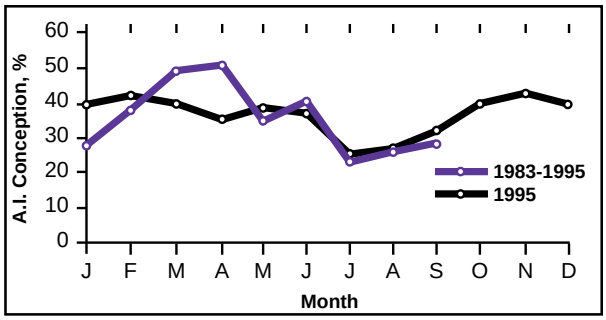

Figure 1.
Monthly conception rates during 12 years (1983-1995) compared with 1995 at the K-State Dairy Teaching and Research Center (Holsteins).

Heart of America Dairy Herd Improvement Summary (November)

	Quartiles				Your Herd
	1	2	3	4	
Aryshire					
Rolling Herd Average	16,810	14,446	13,554	12,066	
Summit Milk Yield 1st	55.2	51.7	49.4	48.1	
Summit Milk Yield 2nd	69.9	64.6	62.4	56.7	
Summit Milk Yield 3rd	76.7	68.9	64.0	58.4	
Summit Milk Yield Avg.	65.6	62.2	58.6	54.9	
Income/Feed Cost	1,062	828	809	826	
SCC 1st LACT	181	158	205	266	
SCC 2nd LACT	231	153	281	201	
SCC 3rd+ LACT	359	282	361	458	
SCC Average	262	211	292	334	
Days to 1st Service	85	90	85	84	
Days Open	112	128	124	126	
Projected Calving Interval	394	410	406	408	
Brown Swiss					
Rolling Herd Average	18,299	15,405	13,806	11,969	
Summit Milk Yield 1st	57.4	50.7	45.6	38.9	
Summit Milk Yield 2nd	72.3	65.6	60.1	51.3	
Summit Milk Yield 3rd	79.5	72.1	64.9	52.2	
Summit Milk Yield Avg.	69.7	64.2	57.1	48.4	
Income/Feed Cost	1,360	1,047	933	889	
SCC 1st LACT	193	160	152	208	
SCC 2nd LACT	314	238	314	211	
SCC 3rd+ LACT	373	441	507	576	
SCC Average	303	318	348	415	
Days to 1st Service	86	89	90	113	
Days Open	134	131	150	142	
Projected Calving Interval	422	419	438	430	
Holstein					
Rolling Herd Average	21,207	18,478	16,594	13,667	
Summit Milk Yield 1st	67.6	61.0	55.4	48.6	
Summit Milk Yield 2nd	85.8	77.0	69.3	58.9	
Summit Milk Yield 3rd	90.6	81.3	74.3	63.3	
Summit Milk Yield Avg.	79.9	72.6	66.1	57.6	
Income/Feed Cost	1,453	1,217	1,076	860	
SCC 1st LACT	195	219	237	261	
SCC 2nd LACT	241	262	284	334	
SCC 3rd+ LACT	397	391	426	533	
SCC Average	278	298	330	403	
Days to 1st Service	87	88	91	92	
Days Open	137	134	131	132	
Projected Calving Interval	417	414	411	410	
Jersey					
Rolling Herd Average	15,242	12,148	11,735	9,887	
Summit Milk Yield 1st	41.9	45.1	40.6	35.6	
Summit Milk Yield 2nd	58.7	53.1	49.2	42.5	
Summit Milk Yield 3rd	64.8	56.9	53.0	45.2	
Summit Milk Yield Avg.	57.4	52.4	48.0	42.0	
Income/Feed Cost	1,316	1,018	839	715	
SCC 1st LACT	183	287	210	207	
SCC 2nd LACT	215	298	256	259	
SCC 3rd+ LACT	378	458	425	464	
SCC Average	273	367	316	343	
Days to 1st Service	85	85	91	81	
Days Open	114	117	121	120	
Projected Calving Interval	393	396	400	399	

Comments on Dairy Records

by J.R. Dunham

Dairy Lines will list Heart of America DHIA summaries each issue. The summary will show the breed quartile averages for some of the important data. Each herd is encouraged to compare their averages with the quartile averages.

Summit Milk Yield (SMY) is one of the important indicators of why a Rolling Herd Average (RHA) is high or low. SMY is the average of the highest two of the first three DHIA milk weights for each lactation. It is the best estimate of the peak of the lactation curve. Since high lactation yields can not be obtained without high peaks in the lactation curve, it follows that the RHA can not be high without high SMY.

Dry cow feeding and management programs plus early lactation feeding have the greatest effect on SMY. Everyone's goal should be to have SMYs equal to or greater than the second quartile average for their breed.

Fluctuations in Conception, *continued from page 1*

the K-State herd. Results for the October inseminations will not be available until after this article goes to press. However, it appears that conception rates are running consistent with previous years. Most in Kansas experienced very high temperatures during July and early August. In Manhattan, we had two to three weeks of daily high temperatures above 100°F. Conception rates during that period are already included in the data for 1995. However, lingering effects of heat stress may yet be manifested in the conception rates for October and November when pregnancy checks are completed in December and early January.

Lactating cows are more susceptible to the effects of heat stress on fertility than non-lactating replacement heifers. Research shows very little effect of heat stress on conception rate in heifers inseminated throughout the summer in many parts of the world. However, heat stress affects pregnant cows. Perhaps you have noticed smaller birth weights of calves born this fall. Heat stress will always reduce late gestational fetal growth and overall birth weights. There are no secrets to solving the problem of poor reproductive efficiency during heat stress, we simply have to look at ways to modify the environment to make cows more comfortable. Now is the time to plan for next summer. Producers may want to evaluate adding cooling systems in the holding pens and free stalls to reduce heat stress. Hopefully, planning ahead for next summer will increase conception rates on your dairy. Happy A.I. Breeding!

Using Prostaglandin Versus Rectal Palpation as a Reproductive Management Tool

by John F. Smith

Recently, a field trial was conducted in New York on 1,624 cows in three commercial dairies to evaluate the effect of reproductive management programs on reproductive performance and economic benefit. Dairy cows were randomly assigned to one of three treatments: (1) rectal palpation at 30 and 50 days post-partum, (2) a single prostaglandin injection 25 to 30 days post-partum, and (3) a prostaglandin injection at day 25 to 30 days post-partum and a second injection at 39 to 46 days post-partum. Cows in all treatments were given an injection of prostaglandin at the beginning of the breeding period (53 to 60 days post-partum) to ensure all animals were exposed to the same length breeding period.

Dairy cows which were palpated (treatment 1) and cows receiving one injection of prostaglandin (treatment 2) had similar reproductive performance. Cows receiving two injections of prostaglandin (treatment 3) had a 10 percent higher pregnancy rate than cows that were palpated (treatment 1). This is probably due to greater synchronization of estrus which resulted in improved heat detection. An economic analysis indicated that the prostaglandin programs (treatments 2 and 3) were less expensive than the rectal palpation program. The results on this study indicate that a prostaglandin program may be cost effective and may improve reproductive performance compared with more traditional programs using rectal palpation.

Summarized from Journal of Dairy Science, Vol. 78, No. 7, pg. 1477-1488.

Milk Quality…
What is Tritatable Acidity?

by Karen Schmidt

One of the screening tests commonly used to evaluate milk quality at the receiving plant is titratable acidity. Titratable acidity, commonly expressed as percent lactic acid, is used to assess milk quality. Fresh milk should not contain significant levels of lactic acid; however, when sodium hydroxide is added to milk, it will react and an acid reaction will occur. This acid unit is known as titratable acidity. (Generally, the acid reaction occurs when a base neutralizes acids.)

If there isn't any lactic acid in the milk, what causes the acid reaction? Fresh milk contains a variety of components that influence and cause the acid reaction. Some of these components include carbon dioxide (which will form carbonic acid), proteins (can react as acid or bases), phosphates and citrates. Each of these components contributes to the titratable acidity value of fresh milk. As expected, their contribution is related to their quantity.

Based on compositional analyses, fresh milk should contain sufficient acid-reacting components to produce a titratable acidity value of .15 to .17% (expressed as lactic acid). These values reflect the **apparent acidity.**

Developed acidity occurs when lactic acid bacteria ferment lactose. The assumption behind the use of titratable acidity as a milk quality assessment tool, relies on the fact that milk composition is fairly stable. Hence, if unwanted microbial growth occurs, titratable acidity values should be greater than .17 percent, reflecting the production of lactic acid from lactose. This can occur when milk is not properly cooled.

Managing Feed Costs, *continued from page 1*

through the digestive system, high quality forages should be selected to maximize dry matter intake. Alfalfa hay with at least a 140 Relative Feed Value should be selected for high producing dairy cows.

*Hay Prices**

	Location	*Quality*	*Price ($/ton)*
Alfalfa	Southwestern Kansas	Premium	90-95
Alfalfa	Southwestern Kansas	Good	85-90
Alfalfa	South Central Kansas	Premium	90-100
Alfalfa	South Central Kansas	Good	80-90
Alfalfa	Southeastern Kansas	Premium	90-95
Alfalfa	Southeastern Kansas	Good	80-90
Alfalfa	Northwestern Kansas	Premium	90-100
Alfalfa	Northwestern Kansas	Good	80-90
Alfalfa	North Central Kansas	Premium	90-100
Alfalfa	North Central Kansas	Good	80-90

Source: USDA Weekly Hay Report, *Week ending 8 December 1995*

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

Feed Stuffs Prices

	Location	*Price ($/ton)*
SBM 48%	Kansas City	214.10-215.10
Cotton Seed Meal	Kansas City	189
Whole Cottonseed	Memphis	150-160
Meat and Bone Meal	Central United States	210-215
Blood Meal	Central United States	405
Corn Hominy	Kansas City	120-125
Corn Gluten Feed	Kansas City	120-125
Corn Gluten Meal 60%	Kansas City	330-335
Distillers Dried Grain	Central Illinois	135-145
Brewers Dried Grain	St. Louis	126
Wheat Middlings	Kansas City	117-120

Source: USDA Weekly Feed Stuffs Report, *Week ending 8 December 1995*

COOPERATIVE EXTENSION SERVICE
U.S. DEPARTMENT OF AGRICULTURE
KANSAS STATE UNIVERSITY
MANHATTAN, KANSAS 66506

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PENALTY FOR PRIVATE USE. $300

Area DHIA Meetings

10 a.m.–3 p.m.

February 1—Hays, Holiday Inn

February 2—Hutchinson, Amish Community Building

February 5—Wichita, 4–H Building

February 6—Seneca, Valentino's

February 7—Salina, 4–H Building

February 8—Ottawa, Extension Office

Dairy Lines is published for dairy producers by the Department of Animal Sciences and Industry, Cooperative Extension Service, Kansas State University.

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