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Dairy Lines

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Upcoming Events

Oklahoma Field Days
Registration: 9 a.m.
Judging contest: 10a.m.

June 10
Milking Shorthorn, Calvin

June 12
Brown Swiss/Jersey, Perkins

June 13
Guernsey/Ayrshire, Perkins

June 18
Holstein/Grady Co.
Judging Clinic, Chickasha

DAIRY RESEARCH & EXTENSION NEWS
http://www.oznet.ksu.edu/dp_ansi/dairylin.htm

Water trough placement key to managing summer heat stress

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Summer is just around the corner. In fact we have already experienced a few days of heat stress. Supplying your cattle with adequate water is the single most important factor in heat stress abatement. Water intake may increase as much as 50 percent during periods of heat stress, and milk contains 87 percent water. The K-State dairy team has been monitoring the effects of water trough location on water consumption by dairy cattle for two years and has documented some interesting facts about where cows drink. Cows exhibit different drinking behavior depending on the location of water troughs in freestall barns. Four pens of cattle at each of three farms were evaluated to determine the relationships between water trough location and consumption during the summer of 2001.

Data presented in Figure 1 demonstrate that when a pen has three crossovers equipped with water troughs, about 39 percent of the total water is consumed at the middle crossover location. Only about 23 percent is consumed from the water trough farthest from the pen exit. This is interesting because all cattle must pass this water trough four or six times per day depending on the milking schedule. Cattle were housed in a four-row freestall barn in 92-cow groups with average milk production ranging from 60 to 98.5 pounds per cow per day over the 14-week study. Each group had access to 30 linear feet of trough space or 3.9 inches per cow.

Another farm used two-row freestall barns with three crossovers per pen (Figure 2). Group sizes ranged from 107 to 97 cows over the course of the 11-week study. Milk production averaged between 71 and 95 pounds per cow day during the

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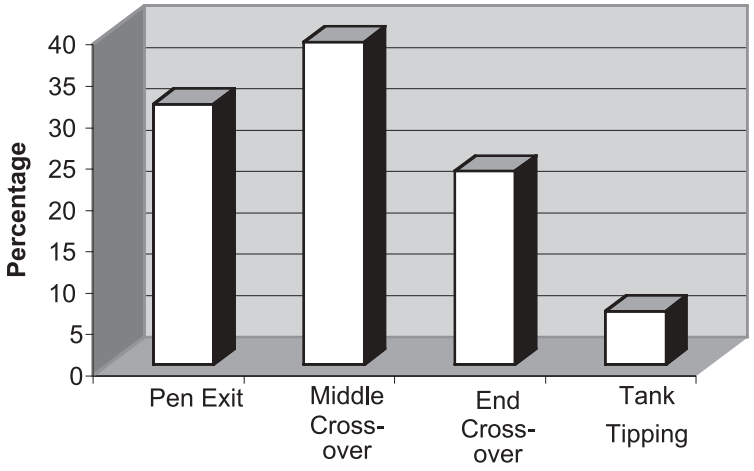
Figure 1. Effect of water trough location on summer water usage in a typical freestall barn.



from page 1

summer months. On this farm, additional summertime water space was provided on the outside walls on both sides of the center crossover. These portable tanks were fed with a garden hose equipped with a simple float and valve. The tanks were added to provide additional water trough space and to reduce cow traffic around the water trough in the center crossover. Total water trough space was about 4 linear inches per cow, but the access points were increased relative to the barn above. Cattle drank a more uniform amount from the crossover troughs, averaging between 23.8 and 25.2 percent depending on crossover location. Cattle consumed almost 9 percent of the total water from the troughs located on the outside walls of the barn. The first farm only tipped tanks once per day using about 6.4 percent of total drinking water. This farm consumed about 17.4 percent of total drinking water demand by tipping the tanks three times per day. Additional water trough tipping increases water consumption.

The third farm (Figure 3) had five crossovers per pen, and each was equipped with two water troughs located on the same side of the crossover. Pens contained between 150 and 175 cattle each and provided about 5.5 linear inches per cow of water trough space. Cattle consumed greater percentages of water from the troughs located in the middle and exit end of the barn. In fact, 72.5 percent of the water was consumed from the troughs located in the exit half of the building. It was also interesting to note that 60 percent of the water consumed at each of the crossovers was consumed from the water trough nearest the feed bunk.

Here are some recommendations based on these findings:

- Provide adequate water space for your cattle. The standard summertime recommendation is that 15 percent of the cattle in a pen should be able to access water at the same time. For a pen of 100 cows, this is 360 linear inches or 30 feet of trough. This is the minimum.

- Provide water on the parlor exit. Cattle provided with water on the parlor exit will consume 3 to 5 gallons per day during the summer months at this location.

- Provide multiple locations in areas where cattle travel when going from the feed bunk to the resting area. Providing additional water locations reduces cow crowding and stress by spreading cattle over a larger area of the barn. Recognize that providing additional water trough space in the center crossover or along the outside wall near the center crossover is relatively inexpensive.

- Monitor tanks several times per day to correct malfunctions. Access to adequate water is the single most important factor in helping your cattle fight heat stress.

Figure 2. Effect of adding additional water troughs on summer water usage in a freestall barn.

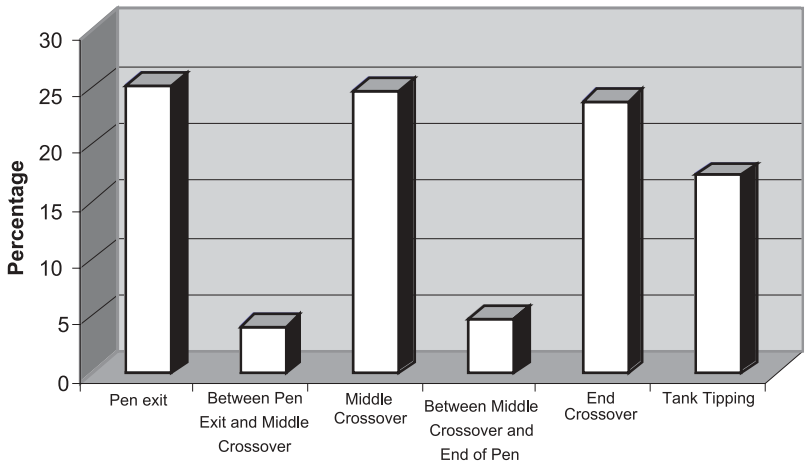
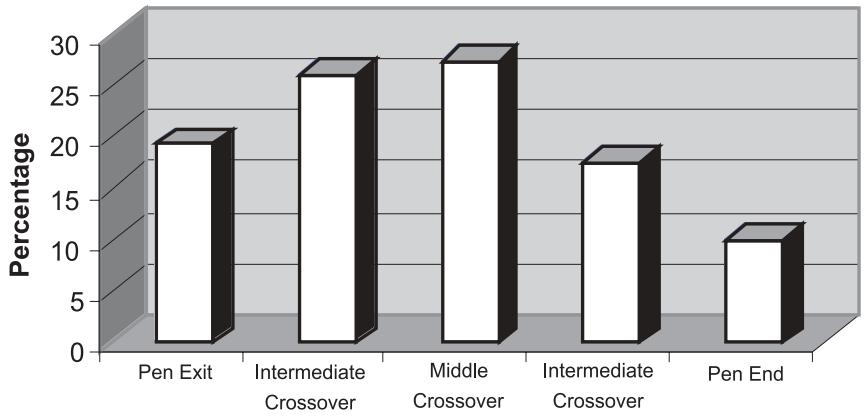


Figure 3. Effect of water trough location on water usage in freestall barns equipped with five crossovers.



Heart of America Dairy Herd Improvement Summary

	Quartiles				Your Herd
	1	2	3	4	
Ayrshire					
Rolling Herd Average	18,835	15,457	14,431	11,121	
Summit Milk Yield 1st	68.5	59.3	51.0	30.3	
Summit Milk Yield 2nd	74.0	46.6	62.0	35.0	
Summit Milk Yield 3rd	42.0	47.6	72.5	60.0	
Summit Milk Yield Avg.	75.0	64.3	62.0	56.3	
Income/Feed Cost	1,749	1,182	1,144	631	
SCC Average	159	153	424	299	
Days to 1st Service	49	87	204	76	
Days Open	118	124	184	128	
Projected Calving Interval	13.0	13.3	15.2	13.4	
Brown Swiss					
Rolling Herd Average	19,480	17,140	15,439	12,996	
Summit Milk Yield 1st	50.3	51.4	49.8	43.4	
Summit Milk Yield 2nd	76.5	71.1	69.0	62.4	
Summit Milk Yield 3rd	83.0	65.2	62.4	59.0	
Summit Milk Yield Avg.	74.6	68.0	63.8	57.1	
Income/Feed Cost	1,859	1,675	1,520	1,000	
SCC Average	420	442	419	408	
Days to 1st Service	98	54	89	32	
Days Open	174	186	174	255	
Projected Calving Interval	14.9	15.3	14.9	17.6	
Guernsey					
Rolling Herd Average	16,926	14,041	13,752	12,945	
Summit Milk Yield 1st	55.0	40.0	46.0	48.0	
Summit Milk Yield 2nd	72.0	56.0	57.0	55.5	
Summit Milk Yield 3rd	70.0	62.0	63.0	57.0	
Summit Milk Yield Avg.	65.0	56.0	56.0	54.5	
Income/Feed Cost	1,672	1,380	1,311	1,191	
SCC Average	466	121	251	390	
Days to 1st Service	84	110	89	111	
Days Open	177	225	199	227	
Projected Calving Interval	15.0	16.6	15.8	16.6	
Holstein					
Rolling Herd Average	23,039	20,141	17,947	14,426	
Summit Milk Yield 1st	73.4	66.4	61.2	52.1	
Summit Milk Yield 2nd	95.0	84.9	75.1	63.4	
Summit Milk Yield 3rd	100	90.3	81.8	68.8	
Summit Milk Yield Avg.	88.5	80.2	73.2	63.1	
Income/Feed Cost	2,205	1,820	1,589	1,195	
SCC Average	351	398	429	573	
Days to 1st Service	91.6	90.6	92	87	
Days Open	166	172	180	215	
Projected Calving Interval	14.7	14.8	15.1	16.3	
Jersey					
Rolling Herd Average	18,556	14,849	13,050	10,854	
Summit Milk Yield 1st	56.0	49.0	41.1	41.7	
Summit Milk Yield 2nd	63.1	60.7	55.2	50.4	
Summit Milk Yield 3rd	66.8	66.0	52.6	47.6	
Summit Milk Yield Avg.	65.7	58.1	54.3	48.4	
Income/Feed Cost	2,165	1,690	1,289	1,083	
SCC Average	397	322	429	593	
Days to 1st Service	83	80	70	110	
Days Open	142	132	163	222	
Projected Calving Interval	13.8	13.5	14.5	16.5	
Milking Shorthorn					
Rolling Herd Average	15,846	14,909	14,134	9,535	
Summit Milk Yield 1st	55.0	50.5	53.5	43.0	
Summit Milk Yield 2nd	57.5	69.5	66.5	53.3	
Summit Milk Yield 3rd	75.5	79.5	67.5	37.3	
Summit Milk Yield Avg.	64.5	69.0	63.5	49.3	
Income/Feed Cost	1,473	1,534	1,233	633	
SCC Average	235	191	326	544	
Days to 1st Service	93.5	40	90	38.3	
Days Open	126	213	142	287	
Projected Calving Interval	13.4	16.2	13.9	18.6	

Hay Prices*—Kansas

	Location	Quality	Price ($/ton)
Alfalfa	Southwestern Kansas	Supreme	120-135
Alfalfa	Southwestern Kansas	Premium	100-120
Alfalfa	Southwestern Kansas	Good	—
Alfalfa	South Central Kansas	Supreme	120-135
Alfalfa	South Central Kansas	Premium	100-120
Alfalfa	South Central Kansas	Good	—
Alfalfa	Southeastern Kansas	Supreme	110-120
Alfalfa	Southeastern Kansas	Premium	90-110
Alfalfa	Southeastern Kansas	Good	80-90
Alfalfa	Northwestern Kansas	Supreme	110-120
Alfalfa	Northwestern Kansas	Premium	100-110
Alfalfa	Northwestern Kansas	Good	—
Alfalfa	North Central Kansas	Supreme	115-130
Alfalfa	North Central Kansas	Premium	100-115
Alfalfa	North Central Kansas	Good	85-95

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, May 7, 2002

Hay Prices—Oklahoma

	Location	Quality	Price ($/ton)
Alfalfa	Central/Western, OK	Premium	100-120
Alfalfa	Central/Western, OK	Good	85-100
Alfalfa	Panhandle, OK	Premium	110-120
Alfalfa	Panhandle, OK	Good	80-95

Source: Oklahoma Department of Ag-USDA Market News Service, May 2, 2002

Feed Stuffs Prices

	Location	Price ($/ton)
Blood Meal	Central US	300
Corn Gluten Feed	Kansas City	66-69
Corn Gluten Meal	Kansas City	220-225
Corn Hominy	Kansas City	73-75
Cotton Seed Meal	Kansas City	140-143
Whole Cotton Seed	Memphis	99
Distillers Grains	Nebraska	90-95
Pork—Meat and Bone Meal	Texas Panhandle	163
SBM 48%	Kansas City	162-170
Wheat Middlings	Kansas City	37-40

Source: USDA Market News Service, May 2, 2002

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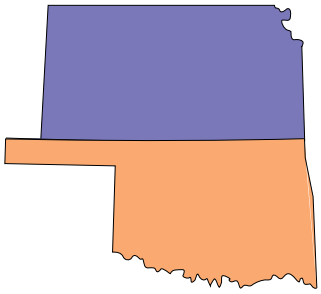

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