

2023 Virginia FFA Dairy Cattle Evaluation and Management CDE Team Activity

Scenario

A progressive dairy farmer located in Virginia has reached out to your team for assistance. The farmer is constantly looking for ways to increase efficiency and improve profitability. They want your team to look for ways to improve the feeding/nutrition program. They provided a DHI-202 Herd Summary to troubleshoot issues related to feeding and nutrition. The following background information was also provided.

- There are 425 cows in the herd. They were milking 358 cows on the most recent DHI test day.
- The herd is composed of 77% Holsteins, 10% Brown Swiss, 10% crossbreds, and 3% Jerseys.
- The farming operation consists of 800 acres (400 owned, 400 rented).
- One hundred percent of forages are grown on the farm.
- A custom harvester is used to harvest crops.
- Feed is stored in bunker silos, ag bags, concrete stave silos, and dried hay storage.
- A nutritionist evaluates and adjusts the ration for the milking herd once a month.
- The base for the single milking cow ration is corn silage and a 80% triticale / 20% ryegrass blend silage. Other ingredients include ground corn, canola meal, soybean meal, roasted soybeans, soybean hulls, and a protein mix. The ration is 49.8% dry matter and provides 0.76 Mcal of net energy per pound and 16.34% crude protein.
- There is only one group for the milking herd. Cows are fed at two feed bunks and have access to feed except when at the milking parlor. At milking time, cows are randomly broken into two groups to go to the holding pen.
- Cows are fed twice a day. Feed is pushed up four times a day.
- The herd uses neck transponders to monitor eating and activity.
- Waterers are emptied and cleaned with a scrub brush every other day.
- Cows are milked in a double-12 parlor three times per day. The parlor is equipped with electronic milk meters.
- Cows are housed in two bedded pack barns bedded with sawdust. Compost is tilled twice a day.
- Variable speed fans are used in the bedded pack barns. They automatically come on when the environmental temperature is above 55°F.
- Far-off dry cows and pre-fresh cows are housed in bedded pack barns. Cows are moved to the transition pen three weeks before expected calving. They move directly to the milking cow bedded pack barns after calving.

Assignment

Briefly discuss the strengths and weaknesses you detect in management related to feeding/nutrition. Support this by citing specific items to support your conclusions. List problems in order of priority (influence on potential herd profit) along with your recommendations for management approaches to correct these problems. In addition, the herd manager has a few specific questions for your team:

1. The herd is currently enrolled in a DHI testing plan and has been testing every other month. They are considering dropping the DHI testing plan since they have electronic milk meters. Is this a good plan? Why or why not?
2. The herd is not currently scoring cows for body condition. Would this practice be beneficial? If so, how would your team suggest using the information in herd management?

HERD SUMMARY

DHI-202

Test Date 07-10-2023 Samples at Lab 07-12-2023 Processed 07-12-2023

Electronic Meters Breed HO Type Test DHIR-APCS Assoc. Supv. String

Production, Income & Feed Cost Summary

Total Cows	Daily Average per Cow on Test Day		Rolling Yearly Herd Averages			
	Number	%	Number	%		
Total Cows	425		414			
Cows in Milk	358	84	360	87		
Milk Lbs (All Cows)	78.1		30404			
Fat Lbs (All Cows)	2.97		1209			
Fat %	3.8		4.0			
Protein Lbs (All Cows)	2.34		926			
Protein %	3.0		3.0			
Milk Lbs (Milking Cows)	92.7					
	Milking Cows	All Cows				
Silage	Lbs Consumed					
Other Succulents or Blended Rations	Lbs Consumed					
Dry Forage	Lbs Consumed					
Other Feeds	Lbs Consumed					
Pasture						
Concentrates	Lbs Consumed					
Cost of Concentrates \$						
Total Feed Cost \$						
Income Over Feed Cost \$						
Feed Cost per CWT Milk \$						
Value of Product \$	19.37	16.32	6503			
Milk Blend Price	Per CWT	% Fat	% Pro	Per CWT	% Fat	% Pro
	21.00	3.6	3.0	20.80	3.6	3.0

Reproductive Summary Of Current Breeding Herd

Total Cows Breeding Herd	Voluntary Waiting Period (VWP)	Days to 1st Service	Cows With No Service Dates or Diag. Open			Cows Bred But Not Diag. Preg.			
			Open VWP to 100 Days	Open Over 100 Days	Number Diag. Open	Under VWP	VWP to 100 Days	101 to 130 Days	Over 130 Days
64	60	77	17	1	1	Number Cows	16	7	23
			27	2	2	% of Breeding Herd	25	11	36

Reproductive Summary Of Total Herd

Days Open at 1st Service	Avg. Days to 1st Service	Services per Pregnancy		Projected Minimum		Service or Heat Interval		Services for Past 12 Months			
		Preg. Cows	All Cows	Calving Interval	Days Open	Interval Length	Number Intervals	Service Number	Number Services	Conception Rate	Service Sire Merit \$
1st Lact	76	2.1	2.4	12.9	112	< 18	41	1st	446	35	+1002
2nd Lact	75	2.0	2.5	12.7	105	18 - 24	174	2nd	279	33	+957
3+ Lacts	78	2.3	2.6	13.1	119	36 - 48	71	3rd +	364	30	+444
All Lacts	76	2.2	2.5	12.9	113	Other	123	Total	1089	33	+917
% of All 1st Services	1	96	4			Current Actual Calving Interval	13.0	Abortions	This Test	Past Year	
								Actual	1	2	
								Apparent	1	8	

Birth Summary

Dam's Lact Num	Offspring Born								
	Males		Females		Calving Difficulty Score				
	Alive	Dead	Alive	Dead	1	2	3	4-5	%4-5
1	43	2	116	2					
2+	292	7	28			2	1	4	57
Total	335	9	144	2		2	1	4	57

Cows To Be Milking, Dry, Calving By Month

	Aug	Sep	Oct	Nov	Dec	Jan
* Milking	347	340	378	384	363	359
Dry	75	76	61	47	59	67
Cows to Calve	33	38	36	46	16	31
Heifers to Calve	11	5	34	4	3	15

* Assumes 2.8% per month culling rate.

Yearly Reproductive Summary

Test Date	% Heats Obs.	Conception Rate	Preg Rate	Number Services	Number Confirm Preg	Number Calving	Total Preg Cows
Test Dropped	72	31	18	145	47	40	232
8-18-22	75	25	10	143	48	103	211
10-18-22	91	34	24	199	38	83	181
2-16-23	87	47	25	334	159	150	229
4-13-23	83	37	39	134	69	45	248
7-10-23	69			134	71	98	253
Averages	82	33	30	189	77	96	224
Totals				944		479	

Miscellaneous Herd Information

	Shipped-Test Day Comparison		Milking Times	Wgh	Spl
	Test Day	Yearly Avg.			
Sum of Test Day Wts	32358	33919	1st 05:30 PM	Y	N
Reported Avg. Daily Bulk Tank Wts	31425	32799	2nd 03:30 AM	Y	N
% Deviation	+3.0	+3.4	3rd 10:36 AM	Y	Y

Remarks:

Cows milked 3 times daily for all or part of this yearly period.

Herd Code	Test Date	07-10-2023	Breed	HO	String
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Identification And Genetics (Genetic Data Source: CDCB)

Stage Of Lactation Profile

		Stage of Lactation (Days)						Total or Average
		1 - 40	41 - 100	101 - 199	200 - 305	306 +		
Number Milking	1st Lact	22	15	27	40	14	118	
	2nd Lact	24	14	32	35	10	115	
	3+ Lacts	11	15	22	53	24	125	
	All Lacts	57	44	81	128	48	358	
	Average Daily Milk	68	87	89	84	75	81	
Average Daily Milk	1st Lact	105	119	102	91	83	99	
	2nd Lact	116	123	111	91	76	98	
	3+ Lacts	93	109	100	89	77	93	
	All Lacts	105	119	102	91	83	99	
% Fat & Pro	1st Lact	% Fat	4.3	3.3	3.6	3.6	4.1	3.8
		% Pro	3.0	2.7	3.0	3.0	3.3	3.0
	2nd Lact	% Fat	3.8	3.5	3.6	3.8	3.9	3.7
		% Pro	2.9	2.7	2.9	3.1	3.3	3.0
	3+ Lacts	% Fat	4.3	3.7	3.9	3.9	3.8	3.9
		% Pro	2.9	2.8	3.0	3.1	3.3	3.1
All Lacts	% Fat	4.1	3.5	3.7	3.8	3.9	3.8	
	% Pro	2.9	2.7	3.0	3.1	3.3	3.0	
SCC SCR	1st Lact	3.0	1.3	2.0	1.5	2.1	1.9	
	2nd Lact	2.0	1.6	2.1	1.5	3.3	1.9	
	3+ Lacts	1.8	2.2	2.2	2.9	2.7	2.6	
	All Lacts	2.4	1.7	2.1	2.1	2.6	2.2	
SCC Score >= 4.0	Number	8	6	12	15	7	48	
	Percent	14	14	15	12	15	13	

Age Group	Number Animals	Avg. Age (Yr-Mo)	Num. Ident. By		Number ID Changes	No. Animals with Merit \$	Average Merit \$		Herd Merit \$ Option	Genetic Profile of Service Sires			
			Sire	Dam			Animal	Sire		A.I. Progeny Tested	A.I. Genomic Tested	All Other A.I. Bulls	Non A.I. Bulls
0 - 12	142	0-06	141	141		141	+689	+908	NM				
13+	157	1-08	157	157		156	+544	+793					
Replacements	299	1-01	298	298		297	+613	+848					
1st Lact	146	2-01	143	144		139	+490	+767	% of Herd Bred to				89
2nd Lact	128	3-03	127	127		124	+351	+604	Number of Bulls Used	1	7		
3+ Lacts	151	5-04	144	150	4	146	+168	+408	Average Merit \$	-111	+993	+0	DCR Milk
All Lacts	425	3-07	414	421	4	409	+333	+592	Avg. Percentile Rank (Net Merit)	27	97		
% Identified (Producing Females)			97	99	No. Heifers Age Over 30 Months			7					

Production By Lactation Summary

Lactation	Number of Cows	Avg. Age (Mo)	Peak Milk	Summit Milk	Proj 305 Day ME			Difference From Herdmates			Avg. Body Wt.
					Milk	Fat	Pro	Milk	Fat	Pro	
					1st Lact	146	25	93	92	29557	
2nd Lact	128	39	116	111	29457	1167	891	+831	+22	+24	1208
3+ Lacts	151	64	124	119	29048	1209	890	-119	+32	+5	1327
All Lacts	425	43	112	108	29332	1184	891	+332	+15	+9	1213

Somatic Cell Summary

SCC	% Cows SCC Score				
	0,1,2,3	4	5	6	7,8,9
	Below 142,000	142,000 - 283,000	284,000 - 565,000	566,000 - 1.13 M	Over 1.13 M
81	7	3	7	1	
84	6	3	2	5	
73	10	6	5	6	
79	8	4	5	4	
30-Day Herd Production Lost From High SCC					
Milk	16452	Dollars (\$)	3536		

Dry Cow Profile

Lact.	Number Dry Periods	Avg. Days Dry	Number Dry by Days		
			< 40	40-70	> 70
1					
2	128	58	4	109	15
3+	151	68	2	102	47
All	279	63	6	211	62

Yearly Summary Of Cows Entered And Left The Herd

Lact.	Number Entered	Cows %	Cows Left	Cows %	Number of Cows Left the Herd									
					Dairy	Low Prod	Repro	Mast	Udder	Feet & Legs	Injury Other	Disease	Died	Not Rptd
					1	163	39	31	7	4	4	11	2	1
2			23	6		2	12	3		3		1	2	
3+			86	21		1	28	24	3	10	2	6	12	
All	163	39	140	34	4	7	51	29	4	14	5	9	17	
					31 % Left Herd For Involuntary Reasons									

Yearly Production And Mastitis Summary

Test Date	Days In Test Period	Number Cows In Herd On Test Day	Test Day Averages (Milking Cows)		150 Day Milk	Test Period Persist. Index	Test Day Averages (All Cows)				Rolling Yearly Herd Average			Somatic Cell Count Summary					MUN	Number Left Herd			
			DIM	Milk			% In Milk	Milk	%Fat	%Pro	Milk	Fat	Pro	% Cows SCC Score						Avg. SCC Linear Score	Wt. Avg. Actual SCC	Died	Sold
			Below 142,000	142,000 - 283,000			284,000 - 565,000	566,000 - 1.13 M	Over 1.13 M														
Test Dropped	61	402	192	98.9	106.3	99	86	85.1	3.6	2.9	31054	1145	917	70	9	9	6	7	2.7	267		3	23
8-18-22	65	418	178	93.0	100.9	98	87	81.2	3.8	2.9	31459	1172	926	74	8	7	6	5	2.3	219		3	25
10-18-22	61	420	160	90.7	95.9	95	83	75.6	4.2	3.2	31618	1191	934	77	9	8	4	3	2.2	169		3	20
2-16-23	121	402	167	98.9	101.3	104	91	90.1	4.1	3.1	31217	1197	936	76	9	6	5	4	2.3	172		11	50
4-13-23	56	406	182	99.7	103.2	101	89	88.9	4.0	3.0	30884	1213	934	80	7	7	2	4	2.1	178			8
7-10-23	88	425	184	92.7	99.7	99	84	78.1	3.8	3.0	30404	1209	926	79	8	4	5	4	2.2	172			20
Averages	78	414	174	95.0	100.2	99	87	82.7	4.0	3.0				78	8	6	4	4	2.2	182		17	123