

2019 Virginia FFA Dairy Cattle Evaluation and Management Career Development Event Team Activity

Scenario: Henry and Harry Hokie are dairy farmers located in the southern part of Virginia. They call you for assistance in evaluating housing and facilities for their herd. They have provided you with a DHI-202 Herd Summary to help with your analysis and also supplied the following background information.

- Number of cows: 307
- Number of heifers: 336
- Milking facilities: Double 12 herringbone parlor
- Milking frequency: 3X/day
- Housing: Freestall barn bedded with sand (sawdust had been used until August 20, 2018)
- Feeding program: Total mixed ration (corn silage, alfalfa haylage, whole cottonseed, ground corn, and protein mix with minerals)

PCDART Health Data

Event	Total	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19**
FRESH	319	13	27	37	40	37	30	30	46	20	18	16	5	0
SOLD	126	1	7	13	17	17	7	8	21	12	12	5	6	0
DIED	9	2	1	1	0	1	2	1	0	0	1	0	0	0
NON-DAIRY CULLS	135	3	8	14	17	18	9	9	21	12	13	5	6	0
ALL CULLS	135	3	8	14	17	18	9	9	21	12	13	5	6	0
ABORT	4	0	0	0	1	0	0	0	0	0	2	1	0	0
RET PLACENTA	13	0	7	2	0	1	0	2	0	0	0	0	1	0
MAST RGT FRT	12	0	3	0	3	2	1	0	1	0	1	1	0	0
MAST LFT FRT	30	0	2	7	12	3	2	0	1	0	0	2	1	0
MAST RT REAR	16	2	3	1	3	2	0	1	0	0	3	0	1	0
MAST LT REAR	21	0	0	1	10	3	3	1	0	0	2	1	0	0
INJURY	1	0	0	0	1	0	0	0	0	0	0	0	0	0
MILK FEVER	8	0	1	1	0	2	0	2	2	0	0	0	0	0

Assignment: Briefly discuss the strengths and weaknesses you detect in herd management related to health and diseases. Support this by citing specific items to support your conclusions. List in order of priority (influence on production and potential herd profit) the problems and your recommendations for management approaches to correct these problems. In addition, the farmer has a few specific questions for you:

- Should she be concerned with heat stress in the herd? Are there any signs of heat stress evident in the records?
- The herd switched bedding during the past year. Is there any evidence that it improved udder health?

HERD SUMMARY

DHI-202

Test Date Samples at Lab Processed
05-14-2019 05-16-2019 05-16-2019

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	307		304.4			
Cows in Milk	284	93	274.0	90		
Milk Lbs (All Cows)	73.4		24668			
Fat Lbs (All Cows)	3.11		1072			
Fat %	4.2		4.3			
Protein Lbs (All Cows)	2.23		769			
Protein %	3.0		3.1			
Milk Lbs (Milking Cows)	79.4					
	Milking Cows	All Cows				
Silage	Lbs Consumed		Lbs Consumed	%ENE		
Other Succulents or Blended Rations	Lbs Consumed		Lbs Consumed	%ENE		
Dry Forage	Lbs Consumed		Lbs Consumed	%ENE		
Other Feeds	Lbs Consumed		Lbs Consumed	%ENE		
Pasture			Days	%ENE		
Concentrates	Lbs Consumed		Lbs Consumed	%ENE		
Value of Product \$	12.83	11.66	4050			
Cost of Concentrates \$						
Total Feed Cost \$						
Income Over Feed Cost \$						
Feed Cost per CWT Milk \$						
Milk Blend Price	Per CWT	% Fat	% Pro	Per CWT	% Fat	% Pro
	15.72	4.1	3.0	15.72	4.1	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	Days Open at Last Service				
101	70	92	8	16	1	Number Cows	4	VWP to 100 Days	101 to 130 Days	Over 130 Days
			8	16	1	% of Breeding Herd	4	23	27	23

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			
	Number Under VWP	Number VWP to 100	Number Over 100		Preg. Cows	All Cows	Calving Interval	Days Open	Interval Length	Number Intervals	Service Number	Number Services	Conception Rate	Service Sire Merit \$
1st Lact	27	71	48	89	2.3	2.6	13.8	139	< 18	9	1st	258	40	+697
2nd Lact	9	39	12	85	2.4	2.9	13.7	136	18 - 24	108	2nd	145	34	+721
3+ Lacts	5	20	16	94	2.4	3.1	13.9	142	36 - 48	74	3rd +	217	37	+730
All Lacts	41	130	76	89	2.4	2.8	13.8	139	Other	141	Total	620	38	+714
% of All 1st Services	17	53	31		Current Actual Calving Interval		13.8				Abortions	This Test	Past Year	
											Actual	1	5	
											Apparent	2	24	

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	66	15	81	9	146	9	9	2	1	
2+	101	13	69	7	168	5	5	2	1	
Total	167	28	150	16	314	14	14	4	1	

Cows To Be Milking, Dry, Calving By Month

	Jun	Jul	Aug	Sep	Oct	Nov
* Milking	274	246	245	256	268	255
Dry	36	61	66	50	48	62
Cows to Calve	10	15	21	40	26	24
Heifers to Calve	10	8	15	6	21	12

* Assumes 3.5% 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	66	43	25	67	24	24	143
6-13-18	46	33	11	58	45	35	162
7-11-18	55	21	7	33	10	25	157
8-13-18	73	17	13	72	7	35	138
9-13-18	37	29	9	31	10	44	116
10-15-18	66	24	17	80	11	38	109
11-13-18	52	30	13	56	19	28	111
12-13-18	57	52	32	73	21	32	108
1-15-19	66	56	34	81	31	41	115
2-14-19	38	47	16	30	48	37	144
3-11-19	64	62	30	39	23	13	154
4-15-19	49			66	28	17	167
5-14-19	44			46	15	15	168
Averages	54	37	19	55	22	30	137
Totals				665		360	

Miscellaneous Herd Information

	Shipped-Test Day Comparison		Milking Times	Wgh	Spl
	Test Day	Yearly Avg.			
Sum of Test Day Wts	22215	20302	1st	3:00pm	Y N
Reported Avg. Daily Bulk Tank Wts	20963	20027	2nd	4:45am	Y Y
% Deviation	+6.0	+1.4	3rd		

Remarks:

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

SURVIVAL ANALYSIS

Test Date: 05-14-2019

DHI-232

Processed: 05-16-2019

Reasons Left by Days Since Fresh

Left from 05-01-18 to 04-30-19

Lact 2+	Feet & Legs	Dairy	Low Prod	Repro	Injury/Other	Died	Mastitis	Disease	Udder	Not Reported	Totals
1-30	1			1	6	4	1				13
31-60	2				6	1	3	3	1		16
61-90	1				1		4	1			7
91-120	1						3	1			5
121-150	1						3	1			5
151-180	1				1		5				7
181-210							2				2
211-240	5			1	1		3				10
241-270	1		1	1			1				4
271-300	2			2	1		2				7
301-330	1								2		3
331-430	2			10	3	2	3				20
> 430	2			2					1		5
Totals	20		1	17	19	7	30	6	4		104
Dry						2					2

Total Cows		% Left by		Monthly Turnover Rate
Test Day	RHA	30 Day	60 Day	
307	304.4	7.2	13.1	4.0

Lact 1	Feet & Legs	Dairy	Low Prod	Repro	Injury/Other	Died	Mastitis	Disease	Udder	Not Reported	Totals
1-30					2		6	1			9
31-60							2				2
61-90	1				1			1			3
91-120	1				2		1				4
121-150					1						1
151-180							1				1
181-210	1										1
211-240							1				1
241-270	1						1				2
271-300			1			1					2
301-330							1				1
331-430	2			1			2				5
> 430				7		2	1				10
Totals	6		1	8	6	3	16	2			42
Dry	1			1		3					5

The data reported are the counts of primary reasons left.

"Dry" reflects the count of cows reported dry prior to leaving.

DHI and Herd Management Goals - HOLSTEINS - September 2018

Prepared by David R. Winston, Extension Dairy Scientist, Virginia Tech

Milk and Components

Parameter	Unit	Regional Average	Suggested Goal
Daily milk - milking cows	lb	70.1	
Daily milk - all cows	lb	60.2	
Summit milk - 1st lactation	lb	73	
Summit milk - 2nd lactation	lb	93	
Summit milk - 3rd+ lactations	lb	100	
Peak milk - 1st lactation	lb	77	
Peak milk - 2nd lactation	lb	98	
Peak milk - 3rd+ lactations	lb	106	
Rolling yearly herd average - milk	lb	22,712	
Rolling yearly herd average - fat	lb	866	
Rolling yearly herd average - protein	lb	695	
Fat percent	%	3.6	≥ 3.7
Protein percent	%	3.0	≥ 3.0
Persistency after peak - 1st lactation*	%		~ 95
Persistency after peak - older cows*	%		~ 90
% 1st lactation ≤ 40 lbs on 1st test day*	%		0
% older cows ≤ 50 lbs on 1st test day*	%		0

Production Rules of Thumb

First lactation peaks should be ~75% of older cows.
 First lactation 305 day ME milk should be within 500 pounds of second lactation.
 Standardized 150 day milk declines > 5 pounds are indicative of a problem.

Reproduction

Parameter	Unit	Regional Average	Suggested Goal
Pregnancy rate	%	20	≥ 20
Days open	days	141	≤ 130
Projected calving interval	months	13.8	≤ 13.6
Average days to 1st service	days	89	≤ 75
Percent of all 1st services < VWP	%	17	≤ 10
Percent of all 1st services > 100 days	%	26	≤ 10
Heats observed	%	48	≥ 65
Yearly successful services	%	**	≥ 40
Successful 1st services	%	42	≥ 45
Services per pregnancy	number	2.7	≤ 2.5
Difficult births - 1st lactation (scores 4+5)	%	3.5	≤ 5
Cows culled for reproduction	%	6.8	≤ 6
Abortions (actual + apparent)	%	3	≤ 5
Retained placentas*	%		≤ 10
Uterine infections*	%		≤ 10

Genetics

Parameter	Unit	Regional Average	Suggested Goal
Percent of herd bred AI	%	79	100
Percent of herd bred with AI genomic tested sires	%	**	≥ 30
Percentile rank - proven AI sires	percentile	53	≥ 90
Percentile rank - AI genomic tested sires	percentile	**	≥ 90
Cows with sire ID	%	76	100
Heifers with sire ID	%	91	100

Udder Health

Parameter	Unit	Regional Average	Suggested Goal
Average SCC score	score	2.6	≤ 3.0
Weighted average actual SCC	cells/ml	250,100	≤ 200,000
1st lactation SCS, days 1-40	score	**	≤ 2.0
Cows culled for mastitis	%	4.7	≤ 3
Incidence of clinical mastitis (monthly)*	cases/100 cows		≤ 3

Desirable Herd Distribution of Somatic Cell Scores

Lactation	Somatic Cell Score			Average SCS
	0-3	4-5	6+	
1	> 80%	~ 20%	0%	≤ 2.5
2	> 70%	~ 25%	< 5%	≤ 2.8
3+	> 65%	~ 30%	< 5%	≤ 3.1
Total Herd	> 65%	~ 30%	< 5%	≤ 3.0

Replacements

Parameter	Unit	Regional Average	Suggested Goal
Average age at first calving	months	25	22-24
Calves dead at birth	%	**	≤ 5
Mortality, birth to 3 months*	%		≤ 5
Mortality, 3 months to calving*	%		≤ 2
Average daily gain*	lbs/day		1.6-1.8
Bodyweight at 1st breeding*	% mature BW		≥ 55
Average age at first breeding*	days		~ 420
Average age at first conception*	days		~ 450
Services per pregnancy*	number		≤ 1.8
Postcalving bodyweight*	% mature BW		≥ 82

Culling

Parameter	Unit	Regional Average	Suggested Goal
Cows left herd	%	38	≤ 30
Voluntary cull rate	%	**	10-20
Involuntary cull rate	%	**	≤ 15
Cow mortality	%	4.8	≤ 2
Cows left herd, 1-30 days in milk*	%		≤ 4
Cows left herd, 1-60 days in milk*	%		≤ 6

Miscellaneous

Parameter	Unit	Regional Average	Suggested Goal
Average days dry	days	**	55-60
Dry periods < 40 days	%	**	0
In milk on test day	%	86	85-88
Average days in milk	days	182	~ 150

Data obtained through DairyMetrics (DRMS) on September 1, 2018.

* Information is not found on a Herd Summary DHI-202.

** Regional averages not available through DairyMetrics.