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)

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

PCDART Health Data

<u>Assignment</u>: 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?

Reported Avg. Daily Bulk Tank Wts

% Deviation

2019 FFA Dairy Cattle	e Evaluatio	on & Ma	anagen	ment CDE	Team	Activity He	erd														Pa	age 1 of 2
			H	IERD	SL	JMMA	NRY														DH	II-202
		Τe	est Da	ite Sa	ample	es at Lab	Proces	ssed														
		05-	-14-20	019	05-1	6-2019	05-16-2	2019														
Electronic Meters				Breed	Н	О Ту	pe Test	DHIR-AI	PCS	Assoc.		5	Supv.		String							
Productior	n, Incom	ne & F	eed (Cost Sur	mma	ry					R	eprodu	uctive S	umma	ry Of Cu	rrent E	Breedin	g Herd				
	Daily A	verage	per		ing Ye			Total C	0000	Voluntar	y I	Days		s With No]	[C	ows Bred E	But Not D	iag. Preg	g.
		n Test I	Day	Herd	Aver	_		Breeding		Waiting Period (VV		to 1st Service	Open	es or Diag	Number	-			Days Ope	n at Last	Service	
Total Cows		307			304.						VF) 3		VWP to	Över	Diag.			Under VWP	VWP t 100 Dat		01 to Days	Over 130 Days
Cows in Milk	Numbe 284		% 93	Numb 274.0		% 90		10	1	70		92	100 Days	100 Day		Numb	er Cows	4			27	23
Milk Lbs		73.4	55		<u>,</u> 2466								8	16		9	6 of ing Herd	4			27	23
(All Cows) Fat Lbs												D			ummary		0					
(All Cows)		3.11			107				pen at 1s	t Sonvico	Avg.	Service	· .	Proje			ice or	ا	Services for	or Post 1	2 Month	
Fat %		4.2			4.	3		Number	Number		Days	Pregn		Minir			nterval	Oracia				s Service
Protein Lbs (All Cows)	2	2.23			76	9		Under VWP	VWP to 100	Over 100	to 1st Service	Preg. Cows	All Cows	Calving Interval	Days Open	Interval Length	Number Intervals	Service Numbe			nception Rate	Sire Merit \$
Protein %		3.0			3.	1	1st Lact	27	71	48	89	2.3	2.6	13.8	139	< 18	9	1st	2	58	40	+697
Milk Lbs (Milking Cows)	7	79.4					2nd Lact	9	39	12	85	2.4	2.9	13.7	136	18 - 24	108	2nd	14	45	34	+721
	Milking	4	AII				3+ Lacts	5	20	16	94	2.4	3.1	13.9	142	36 - 48	74	3rd +		17	37	+730
	Cows	Co	ows				All Lacts	41	130	76	89	2.4	2.8	13.8	139	Other	141	Total		20	38	+714
Silage	Lbs C	Consum	ed	Lbs Cons	sume	3 %ENE	% of All 1st Services	17	53	31]	Current Calving		13.8				Abortio		is Test	Pas	st Year
Other Succulents	L bs C	Consum	ed	Lbs Cons	sume	3 %ENE			Bir	th Sum	mary							Actua Appare		1 2		5 24
or Blended Rations	200 0		<u>ou</u>	200 00110	same		Dam's			Offspr	ing Bor	า						/ tppulo		2		24
Dry Forage	Lbs C	Consum	ed	Lbs Cons	sume	3 %ENE	Lact	Males	Fem	ales	Calvi	ng Difficu	ulty Score			Yea	rly Repr	roduct	ive Sur	nmary	/	
2.9. 0.0.90			1					live Dead		Dead	1	2 3		%4-5	Test	% Heats	Conception		Number	Number Confirm	Number	Total Preg
Other Feeds	LDS C	Consum	ea	Lbs Cons	sume	3 %ENE	2+	66 15 101 13		9 7	146 168	9 5	9 2 5 2	1	Date	Obs.	Rate	Rate	Services	Preg	Calving	Cows
Pasture				Day	/S	%ENE		167 28		-	314		14 4	1	Test Dropped	66 46	43 33	25 11	67 58	24 45	24 35	143 162
Fasiure								/s To B							7-11-18	40 55	21	7	33	45 10	35 25	162
Concentrates	Lbs C	Consum	ed	Lbs Cons	sume	d %ENE		13 10 0	Jun	Jul	Aug	Sep		Nov	8-13-18	73	17	13	72	7	35	138
Value of Product \$	12.83	1	1.66		405		* Milking		274	_	245	256		255	9-13-18	37	29	9	31	10	44	116
Cost of	12.03		1.00		405	0	Dry		36	-	66	50	48	62	10-15-18	66	24	17	80	11	38	109
Concentrates \$							Cows to	Calve	10		21	40	26	24	11-13-18	52	30	13	56	19	28	111
Total Feed Cost \$							Heifers		10	+ +	15	6	20	12	12-13-18	57	52	32	73	21	32	108
Income Over							* Assumes		-						1-15-19 2-14-19	66 38	56 47	34 16	81 30	31 48	41 37	115 144
Feed Cost \$															3-11-19	64	62	30	39	23	13	154
Feed Cost per CWT Milk \$															4-15-19	49			66	28	17	167
••••	Per	%	%	Per	%	%									5-14-19	44			46	15	15	168
Milk Blend Price	CWT	Fat	Pro	CWT	Fat	Pro								ļ	Averages	54	37	19	55	22	30	137
		4.1	3.0	15.72	4.1	3.0								l	Totals				665		360	
				Herd Inf	orma		I															
		ipped-Te st Day	est Day (Comparison Yearly Avg		Milki	ng Times V	Vgh Spl	Ren	narks:												
Sum of Test Day Wts		2215		20302	—	1st 3:	00pm	Y N		o milkod '	2 times	doily for		+ of this	voorly neri	od						
Departed Ava										s miked .	o umes	ually IOF	an or par		yearly peri	ou.						1

Υ

Υ

2nd

3rd

20027

+1.4

20963

+6.0

4:45am

2019 FFA Dairy Cattle Evaluation & Management CDE Team Activity Herd

Identification And Genetics (Genetic Data Source: CDCB)

				Herd Co			Fest Date		19 Breed H	O String			lde	entific	catio	on Ar	nd Ge	enetics	(Gen	etic D	ata S	ource	: CDCB)			ge 2 01 2
		S	tage		tation F				Age Group	Numb		vg. Age Yr-Mo)	Num. Sire	Ident. B	,	umber ID nanges	No. Anir with Merit	ı 🛏	Average I nimal	Merit \$ Sire		d Merit \$ Option			netic Pr ervice \$		
					Stage of La	actation (Day	ys)	Total or	0 - 12	14		0-06	143	_		langes	13	-	414	+647		NM	A.I.	A.I		All	Non
			1 - 40	41 - 100	101 - 199	200 - 305	306 +	Average	13+	19	3	1-08	192				18	4 +:	364	+599			Progeny Tested	Geno Test		Other I. Bulls	A.I. Bulls
		st Lact	7	17	47	51	27	149	Replaceme	00		1-02	335				32		385	+619	% of Bred	Herd	64	3	33		3
Numb Milkin		nd Lact	9	11	25	22	10	77	1st Lact	16		2-02	168				12		269	+457	Num	ber of	20		6		
	-	+ Lacts	1 17	<u>7</u> 35	19 91	21 94	7 44	55 281	2nd Lact 3+ Lacts	8		3-05	83		33 56	1	8		259	+388		Used			6		DCR Milk
<u> </u>		st Lact	62	<u>35</u> 77	77	94 72	64	<u>281</u> 72	3+ Lacts	30		4-11 3-00	56 307			1	5 25	-	190 249	+265	Aver	age t\$	+661	+78	37	+0	104
Avera	ge 2	nd Lact	105	102	93	72	65	87		/ 3U % Identified (No H		9 +. ge Over 30		+401	Avg.	Percentile (Net Mer	; it) 73	ç	91		104
Daily		+ Lacts	56	115	98	70	74	89	L		Toducing	-						umma					Somatic	-			
Milk		II Lacts	84	92	86	75	66	80					Junci		oy ∟a	actat	1011 3										/
	1st	% Fat	3.6	4.2	4.2	4.1	4.4	4.2		Numbe	r Avg.	Peak	Summ	F	Proi 30)5 Day	ME		ifference From		Avg.	0.1.0.0		ows SC	C Scor	e 6	7,8,9
	Lact	% Pro	2.8	2.9	3.0	3.2	3.6	3.2		of	Avg.	Milk	Milk		10,00	lo Duy		He	erdmates		Body	0,1,2,3 Below		284,00	00 56	6,000	7,8,9 Over
%	2nd	% Fat	4.8	4.4	4.2	4.2	4.0	4.3		Cows	(Mo)			М	ilk	Fat	Pro	Milk	Fat	Pro	Wt.	142,00		565,00		13 M	1.13 M
Fat	Lact	% Pro	2.6	3.0	2.9	3.2	3.4	3.0	1st Lact	168	3 26	80	75	258	825	1071	776	-15	-42	+8	1220	69	15	7	,	7	2
& Pro	3+	% Fat	6.1	4.4	4.3	4.1	4.4	4.3	2nd Lact	83	_	106	99			1231			+123	+55	1460	83		4		3	4
PIO	Lacts		2.9	2.6	3.0	3.1	3.4	3.0	3+ Lacts	56		115	107			1248			+146		1500	76	9	5		5	4
	All	% Fat	4.4	4.3	4.2	4.1	4.3	4.2	All Lacts	307	' 36	94	88	266	619 [.]	1146	792	+858	+36	+27	1340	74	11	6		5	3
		% Pro st Lact	2.7	2.9	3.0	3.2	3.5	3.1															Production L				
0.00		nd Lact	3.3 2.1	<u>3.1</u> 1.6	2.5 1.4	2.3 2.7	3.2 3.1	<u>2.7</u> 2.1														Milk	1 101		Dollars	. ,	777
SCC SCR	· –	+ Lacts	6.6	1.0	2.0	2.7	2.8	2.1		Dry Co	w Pro	ofile				Ye	early	Summ	ary O	f Cow	's Ent	ered /	And Left	The	Hero		
		Il Lacts	2.9	2.3	2.0	2.4	3.1	2.3	N	umber Av	g.	Numbe	r Dry	Co	ows		ows				Numbe	er of Cow	s Left the He	erd			
SCC		umber	2.9	2.3	11	12	14	50		Dry Da		by Da			ered	-	eft	Dairv	Low	Repro	Mast	Udder		ury Di	isease	Died	Not
Score >= 4.0	e H	ercent	35	20	12	13	32	18		eriods D	ry < 4	0 40-7	'0 > 70	Num	_			,	Prod				0	her			Rptd
	<u> </u>		55	20	12	10	52	10	1						1 56		7 15		1	9	18		6	8	2	3	───
									2			13 6			1	56	_		1	7	21		12	9	3	3	
									3+ All		62	5 4				56	5 18 9 52		1	11 27	13 52	4		12	3	4	
												18 10			2 57	15	52	% Left He				ns 4	20	29	8	10	
						1		Yearly	Product			titis S		,													
Те	t	Days	Numbe Cows		est Day Ave (Milking Co	0		Test		Day Average All Cows)	es		Rolling Y Herd Ave		_			Sor % Cows S	natic Cel		Summar	,	Wt.			Numt Left H	
Da		In Test	In Her On	ď			150 Day Milk	Period – Persist.	% In Mill	,	%Pro			Pr		0,1,2,3	-			6	7,8,9	Avg. SCC Linear	Avg.	MUI	N		

Test	Days In	Cows	(Milking	Cows)		l est Period		(All	Cows)		He	erd Avera	ge		% C	ows SCC S	core		Avg.	Wt.		Left	Herd
Date	Test Period	In Herd On Test Day	DIM	Milk	150 Day Milk	Persist. Index	% In Milk	Milk	%Fat	%Pro	Milk	Fat	Pro	0,1,2,3 Below 142,000	4 142,000 283,000	5 284,000 565,000	6 566,000 1.13 M	7,8,9 Over 1.13 M	SCC Linear Score	Avg. Actual SCC	MUN	Died	Sold
Test Dropped	36	294	190	81.1	86.4	98	94	76.1	4.9	3.2	26647	1175	823	62	18	11	5	4	3.1	247		1	6
6-13-18	57	291	205	81.1	91.6	105	91	73.4	4.0	3.0	26509	1177	822	58	19	12	7	4	3.2	251		1	23
7-11-18	28	294	203	73.1	83.3	94	88	64.1	4.1	3.1	26522	1176	824	49	16	17	9	8	3.7	487		2	7
8-13-18	33	300	198	72.1	82.2	105	88	63.5	4.0	3.1	26391	1171	821	51	16	12	10	12	3.7	512		2	7
9-13-18	31	299	175	70.0	78.5	98	88	61.5	4.2	3.1	26147	1161	813	61	12	14	6	7	3.1	383			18
10-15-18	32	307	171	70.4	77.8	102	89	62.4	4.2	3.1	25839	1145	803	60	16	9	9	6	3.2	293			13
11-13-18	29	302	172	77.8	85.6	110	89	68.9	4.4	3.3	25637	1132	798	61	18	9	7	6	3.2	406		2	16
12-13-18	30	305	165	73.0	79.3	93	89	64.7	4.6	3.3	25349	1117	791	62	16	11	5	6	3.2	317		1	8
1-15-19	33	315	161	69.9	74.2	96	91	63.4	4.5	3.2	24974	1101	781	63	17	9	6	5	3.1	258		1	8
2-14-19	30	314	157	79.6	83.7	114	94	74.8	4.6	3.1	24844	1098	779	76	11	6	5	2	2.5	165			20
3-11-19	25	306	171	79.7	83.7	104	94	75.0	4.5	3.1	24790	1095	778	81	7	5	4	3	2.4	175		1	13
4-15-19	35	306	184	79.8	84.6	102	92	73.8	4.1	3.0	24676	1078	772	77	9	7	3	4	2.3	173			10
5-14-19	29	307	197	79.4	85.7	103	93	73.4	4.2	3.0	24668	1072	769	74	11	6	5	3	2.4	172			6
Averages	33	304	180	75.5	82.5	102	91	68.2	4.3	3.1				64	14	10	6	6	3.0	299		10	149
			Test Period A	Avg. Milk Lbs	Added	73.	5 Dro	pped															

SURVIVAL ANALYSIS DHI-232 Test Date: 05-14-2019 Processed: 05-16-2019

Reasons Left by Days Since Fresh Left from 05-01-18 to 04-30-19

						-			1		
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
Lact 1	Feet &	Dairy	Low	Denro	Injury/		N.4			Not	
	Legs	Dairy	Prod	Repro	Other	Died	Mastitis	Disease	Udder	Reported	Totals
1-30	Legs	Daily	Prod	керго	Other 2	Died	Mastitis 6	Disease 1	Udder	Reported	Totals 9
1-30 31-60	Legs	Dairy	Prod	Керго		Died			Udder	Reported	
	Legs		Prod	Керго		Died	6		Udder	Reported	9
31-60			Prod	Керго	2		6	1	Udder	Reported	9 2
31-60 61-90	1		Prod	Керго	2		6 2	1	Udder	Reported	9 2 3
31-60 61-90 91-120	1		Prod		2 1 2		6 2	1		Reported	9 2 3 4
31-60 61-90 91-120 121-150	1		Prod		2 1 2		6 2 1	1	Udder	Reported	9 2 3 4 1
31-60 61-90 91-120 121-150 151-180	1		Prod		2 1 2		6 2 1	1		Reported	9 2 3 4 1 1
31-60 61-90 91-120 121-150 151-180 181-210	1		Prod		2 1 2		6 2 1 1	1		Reported	9 2 3 4 1 1 1
31-60 61-90 91-120 121-150 151-180 181-210 211-240	1 1 1		Prod		2 1 2		6 2 1 1 1	1		Reported	9 2 3 4 1 1 1 1 1
31-60 61-90 91-120 121-150 151-180 181-210 211-240 241-270	1 1 1				2 1 2		6 2 1 1 1	1		Reported	9 2 3 4 1 1 1 1 2
31-60 61-90 91-120 121-150 151-180 181-210 211-240 241-270 271-300	1 1 1			1 Kepro	2 1 2		6 2 1 1 1 1 1	1	Udder	Reported	9 2 3 4 1 1 1 1 2 2
31-60 61-90 91-120 121-150 151-180 181-210 211-240 241-270 271-300 301-330	1 1 1 1				2 1 2		6 2 1 1 1 1 1 1	1	Udder	Reported	9 2 3 4 1 1 1 1 2 2 2 1
31-60 61-90 91-120 121-150 151-180 181-210 211-240 241-270 271-300 301-330 331-430	1 1 1 1			1	2 1 2	1	6 2 1 1 1 1 1 1 2	1	Udder	Reported	9 2 3 4 1 1 1 1 2 2 2 1 5

	Total (Cows	% Le	eft by	Monthly
ſ	Test Day	RHA	30 Day	60 Day	Turnover Rate
	307	304.4	7.2	13.1	4.0

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 \leq 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 Al	%	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

	S	Somatic Cell Score								
Lactation	0-3	4-5	6+	Average SCS						
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.