DHI-202 HERD SUMMARY

CONTENTS

June 2016

HERD SUMMARY

55-99-9999
HENRY SMITH

DHI-202

Test Date	Samples at Lab	Processed	
05-31-2012	06-01-2012	06-01-2012	Page 1 of 2

| Breed | HO | Type Test | DHI-APCS | Assoc. | 409 | Supv. | 464 | String | |

② Production, Income & Feed Cost Summary

	②a Daily Average per Cow on Test Day		②b Rolling Yearly Herd Averages	
Total Cows	146		140.1	
	Number	%	Number	%
Cows in Milk	140	96	124.7	89
Milk Lbs (All Cows)	69.5		23,037	
Fat Lbs (All Cows)	2.65		933	
Fat %	3.8		4.1	
Protein Lbs (All Cows)	2.13		727	
Protein %	3.1		3.2	
Milk Lbs (Milking Cows)	72.5			

	Milking Cows	All Cows		
	Lbs Consumed		Lbs Consumed	%ENE
Silage	51	48	16,330	
Other Succulents or Blended Rations	Lbs Consumed		Lbs Consumed	%ENE
Dry Forage	Lbs Consumed		Lbs Consumed	%ENE
	10	9	3,079	
Other Feeds	Lbs Consumed		Lbs Consumed	%ENE
Pasture	NO	NO	Days	%ENE
Concentrates	Lbs Consumed		Lbs Consumed	%ENE
	34	34	12,265	
Value of Product $	11.60	10.89	4,561	
Cost of Concentrates $	4.70	4.61	1,704	
Total Feed Cost $	7.05	6.98	2,526	
Income Over Feed Cost $	4.55	3.91	2,035	
Feed Cost per CWT Milk $	9.72	10.04	10.97	

Milk Blend Price	Per CWT	% Fat	% Pro	Per CWT	% Fat	% Pro
	16.54	4.1	3.1	19.91	4.1	3.2

③ Miscellaneous Herd Information

Shipped-Test Day Comparison	Test Day	Yearly Avg.
Sum of Test Day Wts	9934	8802
Reported Avg. Daily Bulk Tank Wts	9459	8099
% Deviation	+5.0	+8.7

Milking Times		Wgh	Spl
1st	4:05pm	Y	N
2nd	4:50am	Y	Y
3rd			

Remarks:

④a Reproductive Summary Of Current Breeding Herd

Total Cows Breeding Herd	Voluntary Waiting Period (VWP)	Days to 1st Service
49	70	71

Cows With No Service Dates or Diag. Open		
Open VWP to 100 Days	Open Over 100 Days	Number Diag. Open
	10	8
	20	16

	Number Cows	% of Breeding Herd
	13	27

Cows Bred But Not Diag. Preg.			
Days Open at Last Service			
Under VWP	VWP to 100 Days	101 to 130 Days	Over 130 Days
13	2	2	23
27	4	4	47

④b 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	15	37	1	72	2.2	3.8	14.3	156	< 18	7	1st	126	33	+562
2nd Lact	8	17		69	2.5	3.8	14.9	174	18 - 24	12	2nd	81	32	+575
3+ Lacts	15	28		70	1.7	3.7	14.2	152	36 - 48	24	3rd +	109	27	+585
All Lacts	38	82	1	71	2.1	3.7	14.4	158	Other	113	Total	316	31	+573
% of All 1st Services	31	68	1		Current Actual Calving Interval		15.2							

Abortions	This Test	Past Year
Actual		4
Apparent		3

⑤ Birth Summary

Dam's Lact Num	Offspring Born				Calving Difficulty Score				
	Males		Females		1	2	3	4 & 5	% 4+5
	Alive	Dead	Alive	Dead					
1	31	5	25	5	39	2	23	2	3
2+	44	10	39	4	68	1	18		
Total	75	15	64	9	107	3	41	2	1

⑥ Cows To Be Milking, Dry, Calving By Month

	Jun	Jul	Aug	Sep	Oct	Nov
* Milking	135	115	111	110	108	111
Dry	13	30	30	27	25	16
Cows to Calve	3	8	18	7	18	10
Heifers to Calve						

* Assumes 3.2% per month culling rate.

④c Yearly Reproductive Summary

Test Date	% Heats Obs.	Conception Rate	Preg Rate	Number Services	Number Confirm Preg	Number Calving	Total Preg Cows
Test Dropped	32	27	9	15	14	7	72
6-30-11	77	25	12	28		8	66
8-02-11	17	14	2	7	12	15	66
8-31-11	55	18	5	17		20	52
9-29-11	55	13	9	30	9	20	46
10-31-11	58	29	12	31		18	37
11-29-11	59	37	22	46	7	20	29
12-29-11	26	35	15	26		10	24
1-31-12	64	39	18	44	18	9	33
2-29-12	57	35	19	34	17	7	47
3-26-12	43	40	11	15		8	42
4-30-12	58			30	29	10	68
5-31-12	3			12	7	10	72
Averages	48	29	13	27	8	13	49
Totals					320	155	

Herd Code	55-99-9999	Test Date	05-31-2012	Breed	HO	String	

Page 2 of 2

⑦ Stage Of Lactation Profile

		Stage of Lactation (Days)					Total or Average
		1 - 40	41 - 100	101 - 199	200 - 305	306 +	
Number Milking	1st Lact	8	11	11	23	15	68
	2nd Lact		2	7	10	6	25
	3+ Lacts	1	6	8	23	6	44
	All Lacts	9	19	26	56	27	137
Average Daily Milk	1st Lact	56	76	75	69	55	66
	2nd Lact		96	87	71	51	73
	3+ Lacts	107	99	92	77	66	82
	All Lacts	62	85	83	73	57	73
% Fat & Pro	1st Lact % Fat	3.7	3.6	4.1	3.9	4.1	3.9
	% Pro	3.0	2.8	3.0	3.2	3.3	3.1
	2nd Lact % Fat		3.9	3.8	4.0	4.1	4.0
	% Pro		2.7	3.0	3.3	3.6	3.2
	3+ Lacts % Fat	3.7	3.4	3.5	3.8	4.3	3.8
	% Pro	3.0	2.7	2.9	3.1	3.5	3.1
	All Lacts % Fat	3.7	3.6	3.8	3.9	4.1	3.9
	% Pro	3.0	2.8	3.0	3.2	3.4	3.1
SCC ACT	1st Lact	163	41	83	88	301	125
	2nd Lact		14	273	41	122	130
	3+ Lacts	214	384	118	173	433	226
	All Lacts	173	163	148	117	299	163
SCC ACT >= 200	Number	3	1	4	7	8	23
	Percent	33	5	15	13	30	16

Weighted SCC ACT (Nearest 1,000)

⑧a / ⑧ Identification And Genetic Summary

Age Group	Number Animals	Avg. Age (Yr-Mo)	Num. Identified By		Number ID Chk	No. Animals with Merit $	Average Merit $		Herd Merit $ Option
			Sire	Dam			Animal	Sire	
0 - 12	68	0-07	68	68		55	+167	+387	NM
13+	43	1-08	31	43		38	+147	+328	
Replacements	111	1-00	99	111		93	+159	+364	
1st Lact	69	2-00	49	69	2	31	+96	+200	
2nd Lact	28	3-05	18	28		17	+117	+233	
3+ Lacts	49	5-06	36	43	1	31	+118	+159	
All Lacts	146	3-06	103	140	3	79	+109	+193	
% Identified (Producing Females)			71	96	No. Heifers Age Over 30 Months				

	Genetic Profile of Service Sires			
	A.I. Progeny Tested	A.I. Genomic Tested	All Other A.I. Bulls	Non A.I. Bulls
% of Herd Bred to		100		
Number of Bulls Used		31		
Average Merit $	+0	+582	+0	
Avg. Percentile Rank (Net Merit)		91		
DCR Milk	99			

⑨ Production By Lactation Summary

	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	69	24	78	69	24850	984	752	+1414	+54	+38	1210
2nd Lact	28	41	94	89	25462	1030	783	+1188	+65	+42	1470
3+ Lacts	49	66	103	96	25555	979	778	+1482	+23	+43	1500
All Lacts	146	42	90	83	25221	992	768	+1390	+45	+41	1360

⑩ Somatic Cell Summary

	% 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	
1st Lact	82	6	6	4	1	
2nd Lact	88		4	4	4	
3+ Lacts	70	11	5	9	5	
All Lacts	80	7	5	6	3	

Herd Production Lost From SCC This Test Period		
Milk	651	Dollars ($)	108

⑪ Dry Cow Profile

Lact	Number Dry Periods	Avg. Days Dry	Number Dry by Days			
			<40	40-70	>70	
1						
2	26	85	2	18	6	
3+	49	64	2	38	9	
All	75	71	4	56	15	

⑫ Yearly Summary Of Cows Entered And Left The Herd

	Cows Entered		Cows Left		Number of Cows Left the Herd								
	Num.	%	Num.	%	Dairy	Low Prod	Repro	Mast.	Udder	Feet & Legs	Injury Other	Disease	Died	Not Rptd
1	66	45	10	7			4	2			2		2
2			14	10		3		3	1	1	2	2	2
3+			30	21		1	8	6	1	2	3	4	5
All	66	45	54	37		4	12	11	2	5	7	6	7
				37	% Left Herd For Involuntary Reasons								

⑬ 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						Avg. SCC Linear Score	Wt. Avg. Actual SCC	MUN	Number Left Herd	
			DIM	Milk			% 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				Died	Sold
Test Dropped	33	134	248	73.1	82.0	103	85	62.2	3.9	3.1	22664	917	720	66	11	11	7	6	2.9	311	1		
6-30-11	30	136	245	67.8	75.6	95	82	55.7	4.0	3.1	22484	912	717	59	14	12	8	7	3.0	343		
8-02-11	33	138	222	58.7	67.6	92	80	46.4	3.8	3.0	22132	902	706	63	9	14	7	8	2.9	366	1	3
8-31-11	29	142	192	60.3	67.2	104	81	48.6	3.9	3.0	21830	891	697	57	16	14	4	9	3.2	431	3	
9-29-11	29	139	175	68.3	73.2	113	85	57.8	4.0	3.0	21615	883	689	69	7	10	7	8	2.6	271	1	7
10-31-11	32	146	165	70.0	74.0	104	87	60.8	4.3	3.2	21653	882	689	68	12	6	7	6	2.6	278	1	2
11-29-11	29	147	158	70.6	72.7	99	91	64.2	4.1	3.2	21927	890	697	70	12	5	8	5	2.5	282		6
12-29-11	30	144	166	74.4	77.0	107	93	69.2	4.3	3.2	22089	898	700	72	14	5	4	4	2.4	209	1	
1-31-12	33	141	174	75.7	78.2	100	94	70.8	4.3	3.2	22161	902	701	78	5	7	5	5	2.2	250		4
2-29-12	29	133	195	78.7	83.4	107	95	74.5	4.3	3.2	22323	907	706	78	9	4	6	3	2.1	180		12
3-26-12	26	136	205	79.0	84.4	101	96	76.1	4.0	3.2	22556	917	714	80	5	7	2	6	2.1	199		
4-30-12	35	140	215	72.7	78.9	97	96	70.1	4.1	3.1	22842	928	722	77	10	8	2	3	2.0	129		5
5-31-12	31	146	221	72.5	82.0	107	96	69.5	3.8	3.1	23037	933	727	80	7	5	6	3	2.1	146		1
Averages	31	141	194	70.7	76.2	102	90	63.6	4.0	3.1		71	10	8	6	6	2.5	258	7	47		

| Test Period Avg. Milk Lbs | Added | 69.2 | Dropped | 63.2 |

The DHI-202 Herd Summary provides a comprehensive herd analysis and management report including production, reproduction, genetics, udder health and feed cost information. All compiled data result from input into dairy management software by farm staff and/or by the DHI technician on test day.

The DHI-202 is calculated each test day. If the herd is enrolled on the "Permanent String" option, a DHI-202 is also prepared for each string. In multiple breed herds, all cows of each breed can be in separate "Permanent Strings" and their yearly averages can be considered for recognition. When all cows in the herd are the same breed (registered and/or grade), information on the entire herd is used to calculate the herd averages.

Heading Information

Test Date is the month, day and year that the DHI technician finished collecting or verifying data. If a technician records milk weights for the afternoon milking on May 30 and finishes the test the following morning, May 31 is the test date.

Samples at Lab can be compared with Test Date to determine sample shipping time.

Processed is the date processed reports were mailed or uploaded.

Herd Code is unique for each herd. The first two digits identify the state, the third and fourth digits identify the county, and the fifth through eighth digits identify the herd within the county.

Name is the owner's name and farm name (if used) for the herd.

Breed is indicated by a two letter code. The more common breeds are: AY-Ayrshire, BS-Brown Swiss, GU-Guernsey, HO-Holstein, JE-Jersey, MS-Milking Shorthorn, DL-Dutch Belted and WW-Red and White. When two or more breeds are included in the herd and one breed comprises 75 percent or more, the code for this breed is used. If one breed does not predominate, the herd is coded as mixed (XX).

Type Test is the short name and code for the testing plan on which the herd is enrolled. See page 21 for a list and description of all testing plans.

Assoc is the number of the local DHI association for the herd

Supv is the number of the DHI technician servicing the herd.

String will show the string number if herd is divided into permanent strings.

2. Production, Income, and Feed Cost Summary

summarizes production, feed intake, feed cost, and income over feed cost for the current test day.

2a. DAILY Average Per Cow on Test Day

Total Cows are all cows, milking and dry, in the herd on test day. Cows sold during the current test period (day after previous test date through current test date) are not counted.

Cows in Milk includes all cows in milking status on test day. Percent is calculated by dividing cows in milk by total cows and multiplying by 100. For example: (140 cows in milk divided by 146 total cows) x 100 = 96%.

Milk Lbs. (All Cows) is the average milk production for all cows (milking and dry) in the herd. Test day averages are calculated by dividing the sum of test day milk weights (printed for each cow on the DHI-200, 210, 211 or 220) by the total number of cows in the herd on test day.

Fat Lbs. (All Cows) is the average fat production of all cows (milking and dry) in the herd. Test day fat production for each cow is computed from the test day milk weight and fat percent printed on the monthly report. Calculation of average fat production is the same as for average test day milk production.

Fat % is the average fat percent for the herd. Total pounds of fat produced by the herd is divided by the herd's total pounds of milk production to calculate this percentage. For example: (933 lbs. of fat divided by 23,037 milk lbs.) x 100 = 4.05 or 4.1%.

Protein Lbs. (All Cows) is the average pounds of protein produced by the herd (all cows). It is calculated the same as average test day fat production.

Protein % is the average protein percent for the herd. Protein percent is calculated the same way as fat percent. For example: (727 lbs. protein divided by 23,037 milk lbs.) x 100 = 3.15 or 3.2%.

Milk Lbs. (Milking Cows) is the average production for each milking cow on test day. To obtain the average, the sum of milk weights on test day is divided by the number of cows with milk weights.

Production, Income & Feed Cost Summary					
	2a Daily Average per Cow on Test Day		2b Rolling Yearly Herd Averages		
Total Cows	146		140.1		
Cows in Milk	Number	%	Number	%	
	140	96	124.7	89	
Milk Lbs (All Cows)	69.5		23,037		
Fat Lbs (All Cows)	2.65		933		
Fat %	3.8		4.1		
Protein Lbs (All Cows)	2.13		727		
Protein %	3.1		3.2		
Milk Lbs (Milking Cows)	72.5				
	Milking Cows	All Cows			
Silage	Lbs Consumed		Lbs Consumed	%ENE	
	51	48	16,330		
Other Succulents or Blended Rations	Lbs Consumed		Lbs Consumed	%ENE	
Dry Forage	Lbs Consumed		Lbs Consumed	%ENE	
	10	9	3,079		
Other Feeds	Lbs Consumed		Lbs Consumed	%ENE	
Pasture	NO	NO	Days	%ENE	
Concentrates	Lbs Consumed		Lbs Consumed	%ENE	
	34	34	12,265		
Value of Product $	11.60	10.89	4,561		
Cost of Concentrates $	4.70	4.61	1,704		
Total Feed Cost $	7.05	6.98	2,526		
Income Over Feed Cost $	4.55	3.91	2,035		
Feed Cost per CWT Milk $	9.72	10.04	10.97		
Milk Blend Price	Per CWT	% Fat	% Pro	Per CWT	% Fat	% Pro
	16.54	4.1	3.1	19.91	4.1	3.2

DAILY Average Feed Reported

Reporting feed data is optional. If it is reported, care should be taken to use accurate values. Feed intake and cost information are printed both for milking cows and for all cows.

Silage is the average pounds of this forage reported consumed. Total reported consumption by all feed programs of cows in milk is divided by the number of cows in milk to obtain the average pounds consumed by milking cows. Reported consumption by cows in all feed programs is totaled and divided by the total cows to obtain average silage intake for all cows on test day.

Other Succulents or Blended Rations include all other high moisture content, high fiber feeds or blended rations consisting of all or most of the feeds fed to the herd. Examples of succulents are green chop, haylage, wet brewers grain, and root crops. Blended rations may be total mixed rations (TMR) or other mixtures of forages and concentrates. Averages are calculated by the same method as for silage.

Dry Forage refers to hay and other high fiber dry forages fed to the herd. Test day averages are computed by the same method as for silage.

Other Feeds may include all other feeds fed on a group or herd basis. These may include beet pulp, citrus pulp, crushed ear corn, high moisture corn, cottonseed, cottonseed hulls, etc. Blended rations also may be reported in this category. The calculation of test day average is by the same method as for silage.

Pasture indicates whether milking cows have been on pasture this past test period. If just dry cows are on pasture, a "NO" will print under Milking Cows and a "YES" will print under All Cows.

Concentrates include high energy, low fiber feeds fed individually or on a group basis. Test day averages for Milking Cows and All Cows are computed by the same method as for silage. Feeds reported as "*Group Fed Concentrate or Other Feed*" which are over 50% TDN or cost over $100 per ton are summarized as *Concentrates* on the DHI-202.

NOTE: For herds with more than one breed, individual cow forage intake and feed costs are adjusted by the herd average body weight for each breed. For herds on the permanent string option, string average feed data and feed costs are adjusted by the breed average body weight of the entire herd.

DAILY Average Income and Feed Costs

Value of Product $ is a dollar value for the average daily lbs. milk produced. Total daily value for milk produced divided by the number of milking cows yields the Value of Product for Milking Cows. Total daily value for milk produced divided by the total number of cows in the herd (milking and dry) yields the Value of Product for All Cows. Milk price data reported each test day is used in the calculation including price/cwt and fat/protein differentials for milk sold during the month preceding test day. Actual values for all milk sold should be reported.

Cost of Concentrates $ is the average cost per cow based on amounts of concentrate fed and reported cost/ton. Costs per cow are summed for the entire herd and divided by the total cows in the herd (milking and dry) to obtain cost of concentrates for all cows. Costs per cow are summed for the entire herd and divided by the number of cows in milk to obtain cost of concentrates for milk cows.

Total Feed Cost $ is the sum of the cost of concentrates plus all other feeds per cow. Averages are calculated by the same method as for cost of concentrates.

Income Over Feed Cost $ is the difference between Value of Product $ and Total Feed Cost $.

Feed Cost Per CWT Milk $ is the value of all feeds fed to produce 100 pounds (cwt) of milk. The daily average feed cost per cwt milk for milking cows is calculated by dividing Total Feed Cost of cows in milk by the average number of cwts of milk produced by cows in milk. Total Feed Costs for All Cows is divided by the average number of cwts of milk produced by all cows (milking and dry cows) on test day to obtain Feed Cost Per Cwt. Milk for All Cows.

Feed Cost Per CWT Milk $ tends to be lower in high producing herds. Although larger total feed costs per cow will be associated with higher producing herds, a smaller proportion of total feed intake will be associated with nonproduction (i.e., maintenance). The added income from increased production generally more than offsets the increase in total feed cost per cow.

Comparisons of Feed Cost Per CWT Milk $ values can be made on a within herd basis. Monthly trends can be monitored in addition to comparing cost with the same period last year.

Milk Blend Price for test day is the reported milk price and fat and protein tests. This generally represents the price received for milk marketed in the month preceding the date of test since the farm receives this information after the end of the month. The differential adjustment for fat and protein (if applicable) is included in the blend price.

2b. ROLLING YEARLY Herd Averages are computed for all items in the Production, Income and Feed Cost Summary except Milk Lbs (Milking Cows). New herds will receive this information after 365 days on test. See item 2a for a description of each item. A general explanation of the calculation of Rolling Herd Averages (RHA) for milk production follows. This calculation will apply to RHA for other production items, feed intake, feed costs and income values unless otherwise indicated.

To effectively explain the RHA calculation, test interval production and total cow-days per test interval must be defined. The test interval begins the day after the previous test date and ends on the current test date. *Days in Test Period* for each test interval in the past year are listed in the Yearly Production and Mastitis Summary section of the DHI-202.

Total production during each test interval for each cow is calculated using her production on the previous test day and the current test day. Production on the previous test day is the cow's daily production for the first half of the test interval. Production on the current test day is used as the daily production for the last half of the test period. As an example, suppose the test interval is 30 days and a cow produced 70 lb. on the previous test day and 60 lb. this test day. Her test interval production is (15 days x 70 lb.) + (15 days x 60 lb.) = 1,950 lb. Additional adjustments are made to the first, second and last test intervals of a cow's lactation to adjust for nonlinear sections of the normal lactation curve.

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Milk Blend Price	Per CWT	% Fat	% Pro	Per CWT	% Fat	% Pro
	16.54	4.1	3.1	19.91	4.1	3.2

The number of cow-days in a test interval is the accumulation of the number of days that each cow was in the herd during the test interval. Suppose there was a 30-day test interval with 100 cows (milking and dry) in the herd on the current test day. No cows entered or left the herd during the test interval. Total cow-days for the interval were 30 days x 100 cows = 3,000 cow-days. As another example, assume that 99 cows were in the herd on test day. One cow left the herd 5 days into the test interval and one cow entered the herd 15 days before the current test day. The test interval was 32 days. Total cow-days for the test interval were (98 cows x 32 days) + (1 cow x 5 days) + (1 cow x 15 days) = 3,165 cow-days.

To calculate RHA, total yearly milk production for the herd and total cow-days for the year are needed. These are accumulated by test intervals to obtain a production year of 365 days. For the oldest test interval which spans the 365 day period, the portion is used which accumulates exactly 365 days of production. For example, if the old test interval was 30 days and the addition of this interval made a total of 370 days, production for 25 days of this period would be added to the yearly total. For a new herd, RHA will be calculated after the herd has been enrolled in the DHI program for 365 days. When the total yearly production and total cow-days for the year are obtained, total yearly production is divided by total yearly cow-days to yield the average daily production for all cows during the past production year. This average daily production is multiplied by 365 to get the RHA. No adjustments are made for age, stage of lactation, number of dry cows, or length of the dry period. Consequently, extended records and long dry periods will reduce RHA for milk production.

Current Daily Average per Cow on Test Day values compared to averages for the test period dropped (same month of the previous year) may or may not give an indication of the change in RHA from one month to the next. Average production of all cows during the entire test interval is the information used in calculating RHA, not average test day production only. Consequently, when a large number of cows are dry for most of the test interval but calve in time to be tested, an increase in average daily production per cow on test day may be a misleading indicator of the RHA change. The *Test Dropped* is printed with the **Yearly Production and Mastitis Summary**. This information should be used to evaluate changes in RHA.

ROLLING YEARLY Average Production

Total Cows is calculated as total cow days for the "production year" (total of consecutive test intervals comprising approximately 365 days) divided by the sum of all days in the test intervals included in the "production year."

Fat % on a yearly basis is calculated as (RHA fat divided by RHA milk) x 100.
Example: (933/23037 x 100 = 4.1%

Protein % on a yearly basis is calculated as (RHA protein divided by RHA milk) x 100
Example: (727/23037) x 100 = 3.2%

ROLLING YEARLY Average Feed Reported

Lbs Consumed: The yearly summary of pounds consumed by the herd can be used to plan feed requirements for the next year. It also allows you to compare feed intake for the current year with previous years.

%ENE (energy) on an annual basis is the amount of energy derived from each individual feed class (i.e. silage, dry forage, etc.) as a percentage of the total energy contained in all feeds fed to the entire herd. Total Digestible Nutrients (TDN) is the measure used to report the energy value for each feed. TDN information is required only for herds where *Lbs. Indicated* data is requested on the DHI-200. TDN values should be obtained from forage analyses or estimated using standard values for the feed based upon visual quality estimates. Tables for average nutritional values of many forages and concentrates fed are included in Appendix Table 2.

Pasture as a rolling yearly herd average is the total number of Days in all test intervals during the year when feed reported on test day included a pasture quality code. The entire herd, a part of the herd or only dry cows may include pasture. Calculation of the % ENE (energy) from pasture on an annual basis is based upon the total herd energy intake, not just cows that had access to pasture.

ROLLING YEARLY Herd Average Income and Feed Cost

Yearly averages for Value Of Product $, Cost Of Concentrates $ and Total Feed Cost $ are calculated by the test interval method using procedures described for the Rolling Herd Average (see item 2b).

Income Over Feed Cost $ is the difference between the rolling yearly herd averages for Value of Product and Total Feed Cost.

Feed Cost Per CWT Milk $ is calculated by dividing Total Feed Cost by the rolling yearly herd average for milk (all cows) expressed as cwts. [Example: $2526/230.37 cwt= $10.97 feed cost/cwt.]

Milk Blend Price for the year is calculated by weighting each reported test period milk blend price by the test period total milk. Yearly plant % fat and % protein are weighted by multiplying each test period total milk by the corresponding reported plant fat or protein test.

③	Miscellaneous Herd Information							
	Shipped-Test Day Comparison			Milking Times		Wgh	Spl	Remarks:
	Test Day	Yearly Avg.						
Sum of Test Day Wts	9934	8802	1st	4:05pm		Y	N	
Reported Avg. Daily Bulk Tank Wts	9459	8099	2nd	4:50am		Y	Y	
% Deviation	+5.0	+8.7	3rd					

3. Miscellaneous Herd Information

Shipped-Test Day Comparison compares test day results to previous milk shipped information.

Sum of Test Day Wts is the total pounds of milk reported for all cows on test day. If a cow's production is indicated abnormal (CAR code "A" reported) and the record is adjusted by the computer, the actual weight is included in this total. Estimated production (CAR code "E" reported) for cows not milked or their milk was discarded (mastitis treatment or other reason) is not included in this total. Cows "Too Fresh" to test are included if milk weights are reported.

Reported Avg Daily Bulk Tank Wts is the calculated daily production for the herd based on the most recent three milk shipments reported.

% Deviation compares the % difference between Sum of Test Day Wts. and Average Bulk Tank Weights. The denominator is the milk shipped. [Example: (4705 - 4650)/4650 x 100 = 1.2%]. This difference can be used to monitor the accuracy of meters, weigh jars and bulk tank measurements. Milk fed to calves, used in the home, discarded due to mastitis or not shipped for any other reason should be considered in this comparison. A % Deviation below 5% is desirable.

Yearly Averages are obtain by weighing Test Day averages for Sum of Test Day Wts, Reported Average Daily Bulk Tank Wts, and % Deviation by test interval length.

Milking Times indicate starting times of milkings. Milkings weighed and sampled are indicated by Y (Yes) or N (No) in the Wgh and Spl boxes. For herds on alternate AM-PM testing plans, the starting time of the milking prior to the milking being weighed is listed. For herds on an APCS (AM-PM Component Sampling) testing plan, the SPL box will indicate which milking was sampled.

Remarks will print if needed. Cows milked 3 times daily for part or all of this yearly period. One cow milked 3X for one month will trigger this message.

This string average is not for recognition. It should be used only for herd management. This will print for supervised herds with string averages that do not meet the parameters to be a published average.

4. Reproductive Summary includes three major sections: Current Breeding Herd, Total Herd, and Yearly Reproductive Summary. Throughout the discussion of the Reproductive Summary, the word "pregnant" will mean cows diagnosed pregnant for herds reporting routine pregnancy checks. These herds will have the message "Cows Bred But Not Diag. Preg." printed in the Current Breeding Herd section. Routine pregnancy diagnosis in a herd is reported in the options by the DHI technician.

Herds **not** routinely checking for pregnancy, the word "pregnant" will mean cows bred 65 days or more before the current test date or before they left the herd (non-return rate). These herds will have the message "Cows Bred Since MM-DD-YY" printed in the Current Breeding Herd section. The date printed will be 65 days before the current test date.

Reproductive Summary Of Current Breeding Herd (4a)

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			
							Under VWP	VWP to 100 Days	101 to 130 Days	Over 130 Days
49	70	71		10	8	Number Cows	13	2	2	23
				20	16	% of Breeding Herd	27	4	4	47

Cows to be sold without breeding can be given a reproductive code of "C" (Do Not Breed). Cows coded "C" are not included in the calculation of values in the Summary of Current Breeding Herd and in most of the calculations in the Reproductive Summary of Total Herd. They are included in the Yearly Reproductive Summary and in the other sections of the DHI-202.

4a. Reproductive Summary of CURRENT Breeding Herd

This section includes cows in the herd that:
1) have not been bred and are past the Voluntary Waiting Period (VWP)
2) have been bred but currently are diagnosed open
3) last breeding date is too recent for assumed or confirmed pregnancy

Total Cows in Breeding Herd includes cows with no breeding dates open past the VWP, cows bred but not diagnosed or not assumed pregnant, and cows bred but diagnosed open.

Voluntary Waiting Period (VWP) is the desired waiting period from freshening to first service which has been reported in the options as Days Open Goal. If no VWP is specified, 60 days is used as the desired number of days open before first service. An accurate value for the voluntary waiting period should be reported because it is used to calculate Projected Minimum Calving Interval and Projected Minimum Days Open in the Reproductive Summary of Total Herd and to calculate % of Heats Observed in the Yearly Reproductive Summary. A goal for first service is usually 50-60 days after calving.

Days to 1st Service is an average of the days to first service of cows in the current breeding herd. This value is dependent on the VWP for the herd and on % heats observed. If the VWP is extended or if heat detection efficiency declines, the average days to first breeding will increase.

Cows With No Service Dates or Diag. Open includes three categories. The first two categories include cows open from the VWP to 100 days, and cows open over 100 days. The number of cows which have been bred and then diagnosed open at a later time is printed in the area labeled Number Diag. Open. Both the number of cows and the percentage of total cows in the breeding herd in each category are listed. This section is useful in quantifying the number of cows for which heat detection may be a problem. Special attention is needed for those cows open more than 100 days.

Days Open At Last Service - the heading for this section will read either Cows Bred Since mm-dd-yy (65 days before current test day by month, day, year) or Cows Bred But Not Diag. Preg. In herds not designated as using routine pregnancy diagnosis, cows are summarized as pregnant only after they have been bred 65 days or more. Although some individual cows in non-pregnancy check herds may be reported pregnant less than 65 days after breeding, they are still included in the **Reproductive Summary of Current Breeding Herd** until they are bred 65 days or more. Days Open as of Last Service is used to categorize cows in one of four categories; open fewer than the VWP days, VWP-100 days, 101-130 days and over 130 days.

④b

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	15	37	1	72	2.2	3.8	14.3	156	< 18	7	1st	126	33	+562
2nd Lact	8	17		69	2.5	3.8	14.9	174	18 - 24	12	2nd	81	32	+575
3+ Lacts	15	28		70	1.7	3.7	14.2	152	36 - 48	24	3rd +	109	27	+585
All Lacts	38	82	1	71	2.1	3.7	14.4	158	Other	113	Total	316	31	+573
% of All 1st Services	31	68	1		Current Actual Calving Interval		15.2				Abortions	This Test	Past Year	
											Actual		4	
											Apparent		3	

4b. Reproductive Summary of TOTAL Herd

This section is a summary of all cows in the herd on test day. It will include both pregnant and open cows. Some of the categories include cows which have left the herd. If this is the case, it will be noted in the discussion of that category. Cows designated "C" for reproductive status (Do Not Breed) are excluded from the Reproductive Summary of Total Herd unless noted in the discussion of that item.

Days Open at 1st Service divides all cows in the herd that have been bred at least once into three categories; Number under VWP, Number VWP to 100 days, and Number over 100 days. The categories as summarized for lactations 1, 2, 3+, and all lactations. The % of All 1st Services is calculated by dividing the number on the all lactations line by the total number of 1st services for the herd. The goal set for days to first breeding as well as the effectiveness of heat detection in the herd will affect the distribution of cows in these groups. In herds where heat detection is a high priority, larger percentages of cows will be open 100 days or less at first service.

Avg. Days to 1st Service is calculated by summing the days to first service for all cows in each category which have been bred at least once. The sum is divided by the number of cows with first services in that category to obtain the average. Avg. Days to 1st Service is affected by heat detection, VWP prior to first service, and the reproductive health of the herd.

Services per Pregnancy - Preg. Cows includes all pregnant cows. Cows that left the herd in the last nine months are also included if they were diagnosed or assumed pregnant. The numerator is the total number of services and the denominator is the number of pregnant cows.

Services per Pregnancy - All Cows includes all services more than 64 days before test day plus services for cows bred in the last 64 days which have been diagnosed pregnant or open. Cows left herd in the last nine months are also included. Only services for the current lactation of each cow are summarized. The numerator is the total number of services in the evaluation period. The denominator is the number of pregnant cows.

Projected Minimum Calving Interval and Projected Minimum Days Open include cows with breeding dates and cows without breeding dates that are in milk longer than the VWP. Days open for cows with breeding dates are determined using the last breeding date. Days open for cows without breeding dates and in milk longer than the VWP are computed as the greater of: a) days open as of test day plus 10 days or b) average days to 1st service for total herd

Projected Minimum Calving Interval is calculated as: [(Av. Days Open + 280 days) /30.4] days where 280 days is the average length of gestation and 30.4 is the average length of a month.

Projected Minimum Days Open is average days open based on days open calculations given above.

Current Actual Calving Interval includes cows with two reported calvings. The interval is calculated as [(Average number of days between calvings)/30.4)].

Service or Heat Intervals provides a summary of all service or heat intervals for cows currently in the herd. This summary is based on all intervals for each cow. For example, a cow with two reported heat dates and three breeding dates would have four intervals included in the summary. All breeding and heat dates must be reported for this section to be accurate.

Four service/heat interval length categories are listed: < 18 days, 18-24 days, 36-48 days, and all Other intervals. Most normal heat cycles will be from 18-24 days. Intervals less than 18 days can indicate reproductive problems such as cystic ovaries, inadequate heat detection or use of prostaglandin. Intervals of 36-48 days indicate that one heat was not observed. Service or heat intervals in the "other" category are likely to be associated with two or more missed heats, or with abnormal heat cycles, or with the use of prostaglandin. DHIA members who receive the DHI-210 (Monthly Report) can monitor the last service or heat interval length by referring to the "Intvl. Days" column on the DHI-210 form.

Services For Past 12 Months is a summary by 1st service, 2nd service, 3rd and later service and all services. The summary includes all breedings on cows left herd in the last 9 months and all breedings on cows coded with a reproductive code of "C" (Do Not Breed).

Number of Services is determined by adding all monthly services shown in the Yearly Reproductive Summary of the DHI-202 for months with % successful printed (usually all but last 2 test dates). The number of services listed for the month dropped this test period and the month dropped last test period (refer to last month's DHI-202) are added to the total.

Example: 10+16+16+23+20+25+42+58 +45+28+14+11=308 where 14 equals the services from the month dropped and 11 equals the services from the month dropped on last month's DHI-202.

Conception Rate is the number of successful services in each category divided by total services in that category multiplied by 100.

Service Sire Merit $ for each category is the average Merit $ for all services to proven sires.

Abortions

Actual - This Test includes all observed abortions (status code 8) reported this test period.

Apparent - This Test includes cows rebred or diagnosed open following a diagnosed pregnancy

Actual and Apparent Abortions - Past Year is the sum for the most recent 12 months.

NOTE: Herd must be on routine pregnancy checking for abortions to be summarized.

4c. Yearly Reproductive Summary

This section is designed to provide a current review of herd reproductive information for the past year. Services on cows that left during the past year and services on cows coded as reproductive culls are included in this summary.

(4c) Yearly Reproductive Summary							
Test Date	% Heats Obs.	Conception Rate	Preg Rate	Number Services	Number Confirm Preg	Number Calving	Total Preg Cows
Test Dropped	32	27	9	15	14	7	72
6-30-11	77	25	12	28		8	66
8-02-11	17	14	2	7	12	15	66
8-31-11	55	18	5	17		20	52
9-29-11	55	13	9	30	9	20	46
10-31-11	58	29	12	31		18	37
11-29-11	59	37	22	46	7	20	29
12-29-11	26	35	15	26		10	24
1-31-12	64	39	18	44	18	9	33
2-29-12	57	35	19	34	17	7	47
3-26-12	43	40	11	15		8	42
4-30-12	58			30	29	10	68
5-31-12	3			12	7	10	72
Averages	48	29	13	27	8	13	49
Totals				320		155	

Test Dropped labeled on the top line of this summary is normally one test day; however, if the test schedule was irregular, Test Dropped could be blank or it could represent two test periods. Values in the Test Dropped line allow comparisons between current reproduction and reproduction a year ago. The Yearly Reproductive Summary is recalculated for the most recent six test intervals up to 200 days. This improves the accuracy of prior test day records in the event that reproductive data are added or deleted after the test interval in which they occurred.

% of Heats Observed for each test period is an indication of the success of heat detection in the herd. It is calculated as follows: % Heats Obs. = [number of services and heats in the test period for eligible cows / (estrous cycle days in test period for eligible cows / 21)] x 100. Eligible cows are defined as all cows past the VWP which are contributing to estrous cycle days in the test period.

Estrous cycle days for eligible cows are calculated as follows:
a) Cows with no service date or cows diagnosed open: eligible days are calculated as the number of days past the VWP in this test period.
b) Cows bred but not diagnosed pregnant or open: eligible days in the test period are determined as: Eligible days = days in test period through the last service + [days in test period after the last service x (1 - (yearly % successful / 100))]
c) Pregnant cows: eligible days would be the days in the test period up to the successful breeding date. Pregnant cows would only contribute eligible days in cases of unusually long test intervals.

At best, approximately 80-85% of all heats will be detected visually. A recommended goal is to service greater than 70% of possible breedings.

Conception Rate is the number of successful services in each test period divided by the total number of services for that test period. Percent successful is not computed for the two most recent test periods since pregnancy status on most of these breedings has not been determined. For herds on routine pregnancy, a reported pregnancy diagnosis is used to determine percent successful. For herds not reporting pregnancy diagnosis, 65 day non-return is used.

Preg Rate is the percentage of cows eligible to become pregnant that are reported pregnant in a specific period of time. It is a measure of how well and how quickly cows have conceived and it accounts for both heat detection and conception rate. The assessment begins at the end of the VWP after calving and evaluates each 21-day period for eligible cows to determine the percent of cows that became pregnant. Every 21-day period for a cow that lapses without a pregnancy reduces the herd's Pregnancy Rate. The national average Pregnancy Rate is 13-14%.

Number Services is the number of services reported during that test period.

Number Confirmed Preg represents the outcome of pregnancy exams conducted during that test period. Only cows with a "P" reported will be included in this number. Results of pregnancy diagnoses must be accurately reported for this to be a valid summarization.

Number calving is the reported number of calvings during that test period.

Total Preg Cows is the total number of pregnant cows on that test day. In herds on routine pregnancy check, this is all cows in the herd with a "P" reported. In non-pregnancy check herds, this number represents cows with a "P" reported plus cows bred 65 days or more before test day.

5. **Birth Summary** summarizes the number, sex, and mortality of calves born in the last year by first lactation and second and later lactations. The calving difficulty score, if reported, is also summarized for each group on a scale from 1 to 5: 1=No problems, 2=Slight problem, 3=Needed assistance, 4=Considerable force used, and

⑤ 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	31	5	25	5	39	2	23	2	3
2+	44	10	39	4	68	1	18		
Total	75	15	64	9	107	3	41	2	1

5=Extreme difficulty. The percent of births with a difficulty score of 4 and 5 is also listed. Calving ease information may be used to evaluate the effectiveness of selecting the best calving ease sires for heifers and smaller cows.

With all types of dairy records, the output is useful only if the input is complete and accurate. For this section to provide useful information, technicians and producers must report breeding and calving information correctly and promptly. Getting more national information about the relationship between sires and calving ease is important and should provide useful information to individual dairy producers.

6. Cows To Be Milking, Dry, Calving By Month is an eight-month projection for all cows in the herd. Cows are included in this summary according to the following conditions:

⑥ Cows To Be Milking, Dry, Calving By Month						
	Jun	Jul	Aug	Sep	Oct	Nov
* Milking	135	115	111	110	108	111
Dry	13	30	30	27	25	16
Cows to Calve	3	8	18	7	18	10
Heifers to Calve						
* Assumes 3.2% per month culling rate.						

1) Cows in milk on test day with no due date are assumed to be milking all eight months.
2) Cows dry on test day without a due date will be dry for the entire eight months.
3) Cows with due dates after the 15th are assumed dry for that entire month and the previous month.
4) Cows with due dates on or before the 15th are assumed milking that entire month and dry the previous two months.
5) Cows to Calve are cows with due dates that month. These cows are included in the number milking if they are due on or before the 15th of the month and in the number dry if they are due after the 15th of the month.
6) Heifers to Calve in the next eight months are summarized for herds enrolled in Heifer Management option (DHI-214). All heifers due to calve that month will be included in the number milking.

This summary estimates numbers of cows in milk after accounting for the *% per month culling rate* for the herd. This figure is calculated by dividing by 12 the annual % cows left herd figure. The example herd has an average yearly culling rate of 36% (3% per month). Therefore, the projected number of cows to be milking is reduced by 3% the first month, 6% the second month, etc. to reflect the expected effect of normal culling.

7. Stage of Lactation Profile divides the milking herd into five groups based on days in milk for the current lactation: 40 days or less, 41 to 100 days, 101 to 199 days, 200 to 305 days, and 306 days and greater. First, second, and third and later lactation cows are summarized separately within each stage of lactation group. Number Milking, Average Daily Milk, % Fat & Protein, SCC SCR or SCC ACT and SCC SCR > 3.9 or SCC ACT >=200,000 are listed for each group.

Milk production trends across stage of lactation can indicate if the herd is following a normal lactation curve. Milk production should peak in the second stage of lactation (41-100 days) with a gradual decline as days in milk increase.

Production by stage of lactation can be compared with similar values from previous DHI-202 Herd Summaries. Effects of changes in management conditions (such as change in the feeding program) can be

⑦ Stage Of Lactation Profile			1 - 40	41 - 100	101 - 199	200 - 305	306 +	Total or Average
					Stage of Lactation (Days)			
Number Milking		1st Lact	8	11	11	23	15	68
		2nd Lact		2	7	10	6	25
		3+ Lacts	1	6	8	23	6	44
		All Lacts	9	19	26	56	27	137
Average Daily Milk		1st Lact	56	76	75	69	55	66
		2nd Lact		96	87	71	51	73
		3+ Lacts	107	99	92	77	66	82
		All Lacts	62	85	83	73	57	73
% Fat & Pro	1st Lact	% Fat	3.7	3.6	4.1	3.9	4.1	3.9
		% Pro	3.0	2.8	3.0	3.2	3.3	3.1
	2nd Lact	% Fat		3.9	3.8	4.0	4.1	4.0
		% Pro		2.7	3.0	3.3	3.6	3.2
	3+ Lacts	% Fat	3.7	3.4	3.5	3.8	4.3	3.8
		% Pro	3.0	2.7	2.9	3.1	3.5	3.1
	All Lacts	% Fat	3.7	3.6	3.8	3.9	4.1	3.9
		% Pro	3.0	2.8	3.0	3.2	3.4	3.1
SCC ACT		1st Lact	163	41	83	88	301	125
		2nd Lact		14	273	41	122	130
		3+ Lacts	214	384	118	173	433	226
		All Lacts	173	163	148	117	299	163
SCC ACT >= 200		Number	3	1	4	7	8	23
		Percent	33	5	15	13	30	16

Weighted SCC ACT (Nearest 1,000)

determined from these comparisons. The number of cows in each stage of lactation group should be considered. A small number of cows may yield an unrepresentative average.

> % Fat & Prot are listed together to allow comparisons between the two components. Nutrition will have a high influence on these values, and an abnormal inversion may indicate a metabolic disorder. Producers should consult their veterinarian or nutritionist when a high degree of abnormal inversions exist or if any values are abnormally low.
>
> SCC SCR or SCC ACT by stage of lactation can help you monitor somatic cell count across stage of lactation. Increases in the somatic cell count are associated with decreases in milk production. For each 1 unit increase in SCC Score, daily production per cow is expected to decrease by 0.8 lb. for first lactation cows and 1.4 lb. for second and later lactation cows.

Mastitis control can be partially evaluated with the data in this section of the summary, and this information should be used in conjunction with the monthly somatic cell count report for the herd. There are several trends to watch for such as the pattern of counts, are high counts found in early or late lactation, or whether there is no pattern at all. The number and percent of cows over 3.9 or 200,000 does not necessarily represent new infections in the herd.

First lactation cows should have lower SCC scores than older cows. Lowest SCC scores generally will be found early in lactation. High SCC scores after calving may be caused by ineffective dry cow therapy and/or poor environmental conditions in the maternity area. Increases in SCC score can be due to faulty milking equipment, improper milking techniques and/or poor environmental conditions.

8a | **8** Identification And Genetic Summary

Age Group	Number Animals	Avg. Age (Yr-Mo)	Num. Identified By		Number ID Changes	No. Animals with Merit $	Average Merit $		Herd Merit $ Option	Genetic Profile of Service Sires			
			Sire	Dam		**8b**	Animal	Sire		A.I. Progeny Tested	A.I. Genomic Tested	All Other A.I. Bulls	Non A.I. Bulls
0 - 12	68	0-07	68	68		55	+167	+387	NM		100		
13+	43	1-08	31	43		38	+147	+328	% of Herd Bred to				
Replacements	111	1-00	99	111		93	+159	+364	Number of Bulls Used		31		
1st Lact	69	2-00	49	69	2	31	+96	+200	Average Merit $	+0	+582	+0	
2nd Lact	28	3-05	18	28		17	+117	+233	Avg. Percentile Rank (Net Merit)		91		
3+ Lacts	49	5-06	36	43	1	31	+118	+159					
All Lacts	146	3-06	103	140	3	79	+109	+193					
% Identified (Producing Females)			71	96	No. Heifers Age Over 30 Months				DCR Milk	99			

8. Identification and Genetic Summary provides a comprehensive summary of the completeness of identity of the replacement and milking herd as well as a genetic profile of the herd.

8a. Identification Summary gives an age and identity summary of all the recorded animals in the herd. This is an excellent way to verify numbers of replacement and producing animals on the farm with the numbers recorded.

Age Group has two categories for replacements plus a total number line. In addition, milking animals are categorized by lactation number as well as total number (Number Animals) for all lactations.

Average Age Yr-Mo indicates the average age in years and months for each age group category for replacements and is the average age at last freshening for cows. The key figure to monitor in this section is average age of first lactation animals. The goal for this is 24 months. Numerous research trials have indicated that when heifers calve with adequate body size at 24 months of age, it increases lifetime productivity and there is more production per day of life and more replacements. Delaying calving beyond the 24 month age goal has been found to unnecessarily increase heifer rearing costs and reduce herd revenue. The tendency is for the high producing, well managed herds to have younger herds as older cows are being culled and replaced with genetically superior heifers.

Number Identified by Sire / Dam indicate the number of replacement and producing females with identified sires and dams. These data are interpreted in a manner similar to the age and number data.

Number ID Changes is a tabulation of all identification changes which were reported after the second test date following a cow's entry into the herd including: cow, sire or dam identity; cow, sire or dam breed; or date of birth.

% Identified Producing Females is indicated at the bottom of the column. Valid identification for sires, such as registration number, NAAB code or eartag, must be reported in order to be considered as identified. Sire name is not sufficient identification. A low percentage of identified animals indicates the need for improved animal identification to enhance the accuracy and usefulness of the DHI records.

No. Heifers Age Group Over 30 Months is indicated at the bottom of the column.

8b. Genetic Summary

No. Animals with Merit $ indicates the number of animals in each age category that have a value calculated. At least 25% of the herd must have sires with Merit $ values reported for average Merit$ of sires to be calculated. Sires with no available Merit$ are not included in the average.

Average Merit $ for *animals* in the herd and their *sires* are reported. These estimates are calculated by AIPL (Animal Improvement Programs Laboratory at USDA, Beltsville, MD) using the Animal Model method. Genetic progress in a herd is evidenced by an increase in cow and sire Merit$ from younger to older cows. If genetic trend is progressing, the youngest cows in the herd should have the highest Merit$ values. The highest Merit$ for sires should be for current service sires.

Herd Merit $ Option indicates whether a herd chooses bulls based on MFP (milk, fat and protein), MF (milk and fat) or CY (cheese yield). Herd Merit $ option is reported by the DHI Technician in herd options (#74). Codes are **FM** (milk and fat), **CM** (cheese yield) or **NM** (milk, fat and protein). Information reported in the Genetic Profile of Service Sires and in the average Merit $ values for cows and sires of cows will be consistent with the Herd Merit$ Option. PTA values and percentile rankings for bulls will differ depending on the option chosen.

Herd Merit $ Option	Genetic Profile of Service Sires			
NM	A.I. Progeny Tested	A.I. Genomic Tested	All Other A.I. Bulls	Non A.I. Bulls
% of Herd Bred to		100		
Number of Bulls Used		31		
Average Merit $	+0	+582	+0	
Avg. Percentile Rank (Net Merit)		91		
DCR Milk	99			

Genetic Profile of Service Sires summarizes information on A.I. Progeny Tested, A.I. Genomic Tested, All Other A.I. Bulls, and Non A.I. Bulls used in the herd.

% of Herd Bred to A.I. Progeny Tested, A.I. Genomic Tested, All Other A.I. Bulls, and Non A.I. Bulls is reported. % Non-AI Bulls includes herd bulls and young sires in private sampling programs. Formula is: *100 - (% of herd bred to AI progeny tested + % AI genomic tested + % all other AI bulls + % ETs sired by AI bulls).* The breedings considered are the most recent for active cows that have been diagnosed pregnant or not diagnosed. It does not include diagnosed open or Do-Not-Breed cows.

Number of Bulls Used for A.I. Progeny Tested, A.I. Genomic Tested, and All Other A.I. Bulls is listed. Maximizing the use of progeny and genomic tested sires and discontinuing use of herd bulls will maximize genetic progress.

Average Merit $ for progeny and genomic tested sires is reported.

Avg. Percentile Rank (Net Merit) is also summarized for each group so that merit of service sires can be evaluated. Percentile ranking is based on net merit $. Generally, herds should use sires ranking in at least the 80th percentile.

DCR Milk is the Data Collection Rating for milk and is an indication of the accuracy of lactation records from a wide variety of test plans. The squared correlation of estimated and true yields is multiplied by a factor to give monthly testing a rating of 100 and daily testing a rating of 104. DCR is computed as soon as 305 days have lapsed. Herd average DCR is the average of all cows that qualify for inclusion in genetic analysis. For more details, go to http://aipl.arsusda.gov/reference/datarating.htm

NOTE: For this summary to accurately reflect the herd's A.I. breeding program, A.I. sires must be reported using their registration number or uniform NAAB code number. A.I. sires reported using their code name will be summarized under % Non-A.I Bulls.

⑨ Production By Lactation Summary

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	
69	24	78	69	24850	984	752	+1414	+54	+38	1210
28	41	94	89	25462	1030	783	+1188	+65	+42	1470
49	66	103	96	25555	979	778	+1482	+23	+43	1500
146	42	90	83	25221	992	768	+1390	+45	+41	1360

9. **Production by Lactation Summary** is listed for first, second, third and later, and all lactations.

    Number of Cows listed for all lactations will equal total cows in the herd on test day. Average Age is computed by including all cows with reported calving dates. An estimated birth date is used for new cows which entered without a birth date.

Avg. Age (Mo) gives the age in months for each lactation group and for all lactations.

Peak Milk is a cow's highest daily milk production within a lactation for a test day prior to 150 days in milk. Peak is determined after a cow reaches 100 days in milk and will be updated until the cow reaches 150 days in milk. Peak Milk is listed for each lactation group as well as for all animals.

Summit Milk is the average of the two highest of the first three test days production and is listed for animals by lactation number and for all animals. Only cows that have calved in the last 365 days are included. Reviewing these values along with the information in the Stage of Lactation Profile (section 7) can indicate the level of the nutrition program for dry cows and the lactating herd. Cows peaking low and/or early can be a sign of inadequate nutrition, whereas cows peaking later in lactation, but at high levels is seen in herds receiving BST or some form of added fat. An increase of one pound in summit performance usually will relate to 225-230 pounds of increase in Rolling Herd Average.

Proj ME 305 Day ME Milk, Fat, Protein for all cows with projected 305 day mature equivalent (ME) records printed on the DHI-200, 210, 211, 220 and 225 (Monthly Report) are added and averaged. Cows fresh less than 50 days, cows in milk more than 50 days and with only one valid test day milk weight for the current lactation, or cows with no reported calving date are excluded from this calculation. Projected ME 305 Day averages allow comparisons of production of first lactation cows and older cows on an age-adjusted basis. Generally, average projected ME 305 day production of first lactation cows will be 400-600 lb. less than the average for second and later lactation cows. Although the average PTA of sires of first lactation cows may be higher, second and later lactation cows have been culled more heavily. Relatively large differences in average projected ME production may be due to significant differences in genetic and/or management factors.

Difference from Herdmates Milk, Fat and Protein for all cows with a value printed on the DHI-200 and 220 are added and averaged. This is the number of pounds that the cow's current 305-2X-ME record compared to the average of the herdmates adjusted for record in progress. Herdmates are those cows of the same breed and calving season. There are two calving seasons (November to May and June to October).

Avg. Body Wt. is computed from individual cow body weights reported when the cow's calving date is reported. Cows entering the herd without body weights are estimated using the following:

Breed	1st lact.	2nd lact.	3rd or later lact.
Ayrshire	900	990	1100
Guernsey	850	930	1050
Holstein	1100	1210	1350
Jersey	800	880	1000
Brown Swiss	1100	1210	1350
All Others	1000	1100	1220
Dairy Goats	100	110	120

10. Somatic Cell Count Summary provides a herd analysis for milk quality and mastitis /udder health.

> % Cows SCC Score - the % of first, second, and third and greater lactation cows, and all cows in each of five somatic cell count score categories (0-3, 4, 5, 6, 7-9) are listed. At least 25% of milking cows must have somatic cell counts reported for this section to print. A large proportion of the herd should have SCC scores of 3 or less. A recommended goal is for 70% or more of first lactation cows to have scores 0 to 3 while 55-60% of the entire herd should be in this category. No more than 7-8% of the entire herd should have an SCC score of 6 or greater. Producers need to evaluate milking equipment, milking procedures and/or environmental conditions when relatively high percentages of cows score at SCCS 6 or higher.

⑩ Somatic Cell Summary				
% 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
1st Lact 82	6	6	4	1
2nd Lact 88		4	4	4
3+ Lacts 70	11	5	9	5
All Lacts 80	7	5	6	3

Herd Production Lost From SCC This Test Period			
Milk	651	Dollars ($)	108

> Herd Production Lost From SCC This Test Period indicates the expected loss of milk and income due to the somatic cell count for the entire herd. These dollar values are based on research relating to production losses due to subclinical mastitis in relation to the somatic cell count. They do not include any quality premiums lost by the herd as a result of high cell counts.

⑪ Dry Cow Profile						⑫ Yearly Summary Of Cows Entered And Left The Herd												
Lact	Number Dry Periods	Avg. Days Dry	Number Dry by Days			Cows Entered		Cows Left		Number of Cows Left the Herd									
			<40	40-70	>70	Num.	%	Num.	%	Dairy	Low Prod	Repro	Mast	Udder	Feet & Legs	Injury Other	Disease	Died	Not Rptd
1						66	45	10	7			4	2		2	2			
2	26	85	2	18	6			14	10		3		3	1	1	2	2	2	
3+	49	64	2	38	9			30	21		1	8	6	1	2	3	4	5	
All	75	71	4	56	15	66	45	54	37		4	12	11	2	5	7	6	7	
									37	% Left Herd For Involuntary Reasons									

11. Dry Cow Profile includes the number of dry periods and average days dry for the last completed dry period for all cows in the herd. Information on second, third and later lactations is reported, as well as an average for all lactations. Dry periods are grouped by length: dry fewer than 40 days, dry 40-70 days, and dry over 70 days. The length of the dry period has a significant effect on the subsequent lactation. Cows dry fewer than 40 days or more than 70 days tend to produce less milk during the next lactation than herdmates that are dry an optimum of 50-60 days.

12. Yearly Summary of Cows Entered and Left the Herd is a measure of herd turnover and herd replacement. The yearly period is comprised of the test periods printed in the Yearly Production and Mastitis Summary of the DHI-202 (number of test periods closest to 365 days).

Rolling herd average is used to calculate the % of cows entering and leaving the herd. "Voluntary" culling of low production cows and cows sold for dairy purposes (first two categories) are the most desirable reasons for culling. When large numbers of cows are culled for involuntary reasons (reproductive failure, mastitis, udder, poor feet and legs, injury, disease or death), "voluntary" culling is limited. Cow turnover for reasons other than low production or dairy purposes should be minimized. The percentage overall and by lactation are computed by dividing the number of cows in each category by the Rolling Herd Average number of cows.

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		
			DIM	Milk			% In Milk	Milk	%Fat	%Pro	Milk	Fat	Pro
Test Dropped	33	134	248	73.1	82.0	103	85	62.2	3.9	3.1	22664	917	720
6-30-11	30	136	245	67.8	75.6	95	82	55.7	4.0	3.1	22484	912	717
8-02-11	33	138	222	58.7	67.6	92	80	46.4	3.8	3.0	22132	902	706
8-31-11	29	142	192	60.3	67.2	104	81	48.6	3.9	3.0	21830	891	697
9-29-11	29	139	175	68.3	73.2	113	85	57.8	4.0	3.2	21615	883	689
10-31-11	32	146	165	70.0	74.0	104	87	60.8	4.3	3.2	21653	882	689
11-29-11	29	147	158	70.6	72.7	99	91	64.2	4.1	3.3	21927	890	697
12-29-11	30	144	166	74.4	77.0	107	93	69.2	4.3	3.2	22089	898	700
1-31-12	33	141	174	75.7	78.2	100	94	70.8	3.9	3.2	22161	902	701
2-29-12	29	133	195	78.7	83.4	107	95	74.5	4.3	3.2	22323	907	706
3-26-12	26	136	205	79.0	84.4	101	96	76.1	4.0	3.2	22556	917	714
4-30-12	35	140	215	72.7	78.9	97	96	70.1	4.1	3.1	22842	928	722
5-31-12	31	146	221	72.5	82.0	107	96	69.5	3.8	3.1	23037	933	727
Averages	31	141	194	70.7	76.2	102	90	63.6	4.0	3.1			

⑬ **Yearly Production And Mastitis Summary**

Test Period Avg. Milk Lbs   Added **69.2** Dropped **63.2**

13. Yearly Production and Mastitis Summary is designed to provide an up-to-date review of herd information for the past year. Comparison of all tests conducted during the year can be made and changes noted. Most items included in this section have been discussed previously. See item 2a for more detailed explanations.

Test Date - the top line of this column is labeled "Test Dropped." Normally this is one test day. However, if the test schedule was irregular, Test Dropped could be blank or could represent two test periods. Values in the "Test Dropped" line allow comparisons between current production and production a year ago.

Averages are printed on the bottom line for most items (except Rolling Herd Averages). They are computed as unweighted averages for all items in the test period listed. No adjustments are made for the length of each test period.

Days in Test Period are determined as the period beginning on the day after the previous test and ending on the current test date.

Number of Cows in Herd on Test Day is the total number of cows on the DHI-201 (Barn Sheet) for each test day minus the number of cows that left the herd during the test period.

Test Day Averages (Milking Cows) includes a column for DIM (Days in Milk), which is the average days in the current lactation for each cow in milk on test day. This figure provides a measure of the average stage of lactation of the herd. Test Day Averages (Milking Cows) tend to decline as average days in milk increase. The average pounds of milk for milking cows (Milk) is also listed.

150 Day Milk is designed to provide a comparison of test day production of the milking cows from one month to the next after standardizing to a common days in milk (150 days). Regional lactation curves for breed, lactation number and season of calving are used to adjust each cow's test day milk production to her expected production assuming she was 150 days in milk on test day. The standardized production values are computed and averaged for all cows in milk 330 days or less. Standardized 150 day milk is an excellent tool for monitoring the effect of feeding and management changes.

	⑬ **Yearly Production And Mastitis Summary**																		
Test Date	**Test Period Persist. Index**	**Test Day Averages (All Cows)**				**Rolling Yearly Herd Average**			**Somatic Cell Count Summary**							**MUN**	**Number Left Herd**	
		% In Milk	**Milk**	**%Fat**	**%Pro**	**Milk**	**Fat**	**Pro**	**% Cows SCC Score**					**Avg. SCC Linear Score**	**Wt. Avg. Actual SCC**		**Died**	**Sold**
									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**					
Test Dropped	103	85	62.2	3.9	3.1	22664	917	720	66	11	11	7	6	2.9	311		1	
6-30-11	95	82	55.7	4.0	3.1	22484	912	717	59	14	12	8	7	3.0	343			
8-02-11	92	80	46.4	3.8	3.0	22132	902	706	63	9	14	7	8	2.9	366		1	3
8-31-11	104	81	48.6	3.9	3.0	21830	891	697	57	16	14	4	9	3.2	431		3	
9-29-11	113	85	57.8	4.0	3.2	21615	883	689	69	7	10	7	7	2.6	271		1	7
10-31-11	104	87	60.8	4.3	3.2	21653	882	689	68	12	6	7	6	2.6	278		1	2
11-29-11	99	91	64.2	4.1	3.3	21927	890	697	70	12	5	8	5	2.5	282			6
12-29-11	107	93	69.2	4.3	3.2	22089	898	700	72	14	5	4	4	2.4	209		1	7
1-31-12	100	94	70.8	3.9	3.2	22161	902	701	78	5	7	5	5	2.2	250			4
2-29-12	107	95	74.5	4.3	3.2	22323	907	706	78	9	4	6	3	2.1	180			12
3-26-12	101	96	76.1	4.0	3.2	22556	917	714	80	5	7	2	6	2.1	199			
4-30-12	97	96	70.1	4.1	3.1	22842	928	722	77	10	8	2	3	2.0	129			5
5-31-12	107	96	69.5	3.8	3.1	23037	933	727	80	7	5	6	3	2.1	163			1
Averages	102	90	63.6	4.0	3.1				71	10	8	6	6	2.5	258		7	47
	Test Period Avg. Milk Lbs			Added		69.2	Dropped		63.2										

Test Period Persistency Index provides a means to determine if the herd produced as expected during the current month based on the previous month's production. Each cow's expected % change in production from last month to this month is computed as the ratio of each cow's standardized 150 day milk for the last two test days. An average ratio is computed to determine the test period persistency for the herd. A Test Period Persistency Index of less than 90 may indicate that changes in management practices had a negative effect on herd production. Index values over 110 may be due to favorable management or feeding changes during the past month causing herd production to be above the normal "expected" level.

Test Day Averages (All Cows) report average Milk production, % Fat and % Protein for all cows in the herd, including dry cows. The % of cows in the herd in milk on test day (% In Milk) is also reported.

Rolling Yearly Herd Average for milk, fat and protein for each test period in the past year are listed. See item 2b for a detailed description of the Rolling Herd Average calculation.

Somatic Cell Count Summary includes the % of cows in each of the five SCCS categories (see item 10). The Average SCC Score is calculated as an unweighted average of SCC scores of milking cows on test day. The Actual SCC reported is a weighted average actual somatic cell count to the nearest 1000. This information is a valuable tool for dairy farmers in monitoring the udder health of the herd. The trend in Average Somatic Cell Counts should be observed each month. Large increases may indicate faulty milking equipment, improper milk practices and/or poor environmental conditions. These items should be examined as possible reasons for an increasing SCC Score.

Number Left Herd includes the number of cows Died or Sold during each test period.

Test Period Average Milk Lbs Added and Dropped should be used to evaluate changes in the Rolling Herd Average for milk. See item 2b for an explanation of the use of test period averages in calculating the Rolling Herd Average.

DHIA TESTING PLANS

Effective January 2010

SUPERVISED DHI

Supervised DHI test conducted by certified field technician / rep

Code	Plan	Description
00	**DHI**	All milkings are weighed and sampled on test day.
31	**DHI-AP**	Less than all milkings are weighed and sampled on test day.
02	**DHI-APCS**	All milkings are weighed and less than all milkings are sampled on test day.
33	**DHI-MO**	All milkings are weighed, but no samples are taken on test day.
34	**DHI-MO-AP**	Less than all milkings are weighted and no samples are taken on test day.

SUPERVISED DHIR

Supervised DHI test conducted by certified field tech / rep plus adherence to breed association rules.

Code	Plan	Description
20	**DHIR**	All milkings are weighed and sampled on test day.
23	**DHIR-AP**	Less than all milkings are weighed and sampled on test day.
22	**DHIR-APCS**	All milkings are weighed and less than all milkings are sampled on test day.

UNSUPERVISED

Dairy Producer is responsible for weighing and sampling on test day.

Code	Plan	Description
40	**DHI-OS**	All milkings are weighed and sampled on test day.
41	**DHI-OS-AP**	Less than all milkings are weighed and sampled on test day.
42	**DHI-APCS**	All milkings are weighed and less than all milkings are sampled on test day.
43	**DHI-OS-MO**	All milkings are weighed, but no samples are taken on test day.
44	**DHI-OS-MO-AP**	Less than all milkings are weighted and no samples are taken on test day.
45	**DHI-OS-AC**	All milkings are weighed, but no samples are taken on test day. Breed or bulk tank average is used.
46	**DHI-OS-APAC**	Less than all milkings are weighed, but no samples are taken on test day. Breed or bulk tank average is used.

SUPERVISED COMMERCIAL

DHI field tech weighs and samples milk, but certain aspects of uniform operating procedures are not followed.

Code	Plan	Description
70	**DHI-COMM**	All milkings are weighed and sampled on test day.
71	**DHI-COMM-AP**	Less than all milkings are weighed and sampled on test day.
72	**DHI-COMM-APCS**	All milkings are weighed and less than all milkings are sampled on test day.
73	**DHI-COMM-MO**	All milkings are weighed, but no samples are taken on test day.
74	**DHI-COMM-MO-AP**	Less than all milkings are weighted and no samples are taken on test day.

Silage Values to Use if Forage Test is Not Available

Item	%DM	CP%	NEL / lb.
Corn (Poor to Excellent)	29-33	8.4-8.1	.64-.73
Grain Sorghum	27	6.2	.59
Millet	28	9.5	.65
Rye	32	12.8	.54
Small Grain (oats, wheat)	30	11.9	.58
Sorghum (Poor to Excellent)	28-30	6.0-7.5	.56-.61
Soybean	27	17.3	.56

Hay Values to Use if Forage Test is Not Available

Item	%DM	CP%	NEL / lb.
Alfalfa-Bright and leafy	90	18-23	.61-.68
Alfalfa-Dark and stemmy	90	15-17	.56-.59
Coastal Bermuda-Bright Green	92	12-16	.50-.56
Coastal Bermuda-Brown/Bleached	93	8.0	.42
Fescue	89	8-10	.57-.59
Johnson grass	89	9.5	.54
Millet Hay	87	8.6	.60
Oat-Dark green, immature heads	90	17.5	.75
Oat-Brown or bleached, ripe heads	90	11.5	.54
Orchard grass (early bloom)	89	15.0	.67
Orchard grass (late bloom)	91	8.4	.55
Ryegrass	86	8.6	.66
Sorghum Hybrids-Fine stem	91	8.0	.57
Wheat	86	9.0	.59

Concentrates TDN Values

Feed Ingredient	TDN
Animal Fat (Hydrolyzed)	233
Shelled Corn	78
Corn and Cob Meal	72
Snapped Corn	68
Grain Sorghum	76
Barley	74
Oats	68
Wheat Bran	69
Whole Cotton Seed	88
Cotton Seed Meal (41%)	62
Soybean Meal	80
Peanut Meal	75
Corn Gluten Feed - Wet, 40% DM	33
Whole Soybeans	83
Hominy Feed	85
Milo	75
Wheat	78

Other Succulents Values to Use if Forage Test is Not Available

Item	%DM	CP%	NEL / lb.
Alfalfa Haylage	50	17.0	.64
Beet Pulp, Dried	92	10.1	.81
Brewers Grain, Wet	20	25.4	.80
Corn Cobs	90	3.2	.50
Cotton Seed Hulls	91	4.1	.45
Crushed Ear Corn	88	10.0	.89
Citrus Pulp	91	6.7	.80
Distillers Grain, Dry	94	23.0	.90
Dried Cane Molasses	94	10.3	.73
Grass-Legume Haylage	55	12.4	.60
Maltlage	44	17-22	.81
Oat Straw	92	4.4	.50
Orange Pulp	88	8.5	.81
Peanut Hulls, Ground	94	6.6	.35
Potatoes, Fresh	23	9.5	.85

Concentrates Values

Item	DM%	CP%	NEL / lb.
Barley	88	13.5	.88
Corn and Cob Meal	87	9.0	.87
Corn Gluten Feed	90	25.6	.87
Corn Gluten Meal	91	65.9	.94
Corn Grain, Ground	89	9.7	.93
Cotton Seed Meal (41%)	91	45.6	.79
Cotton Seed, Whole	92	23.0	.99
Grain Sorghum	87	9.7	.84
High Moisture Ear Corn	70	9.6	.78
High Moisture Shelled Corn	70	10.7	.93
Hominy Feed	90	11.5	.91
Milo, Rolled	89	11.9	.86
Oats	89	13.3	.80
Peanut Meal	92	52.0	.83
Shelled Corn	89	10.0	.93
Soybean Meal (44%)	89	49.6	.88
Soybeans, Whole	90	41.7	.99
Wheat	89	16.0	.93
Wheat Bran	89	17.1	.73