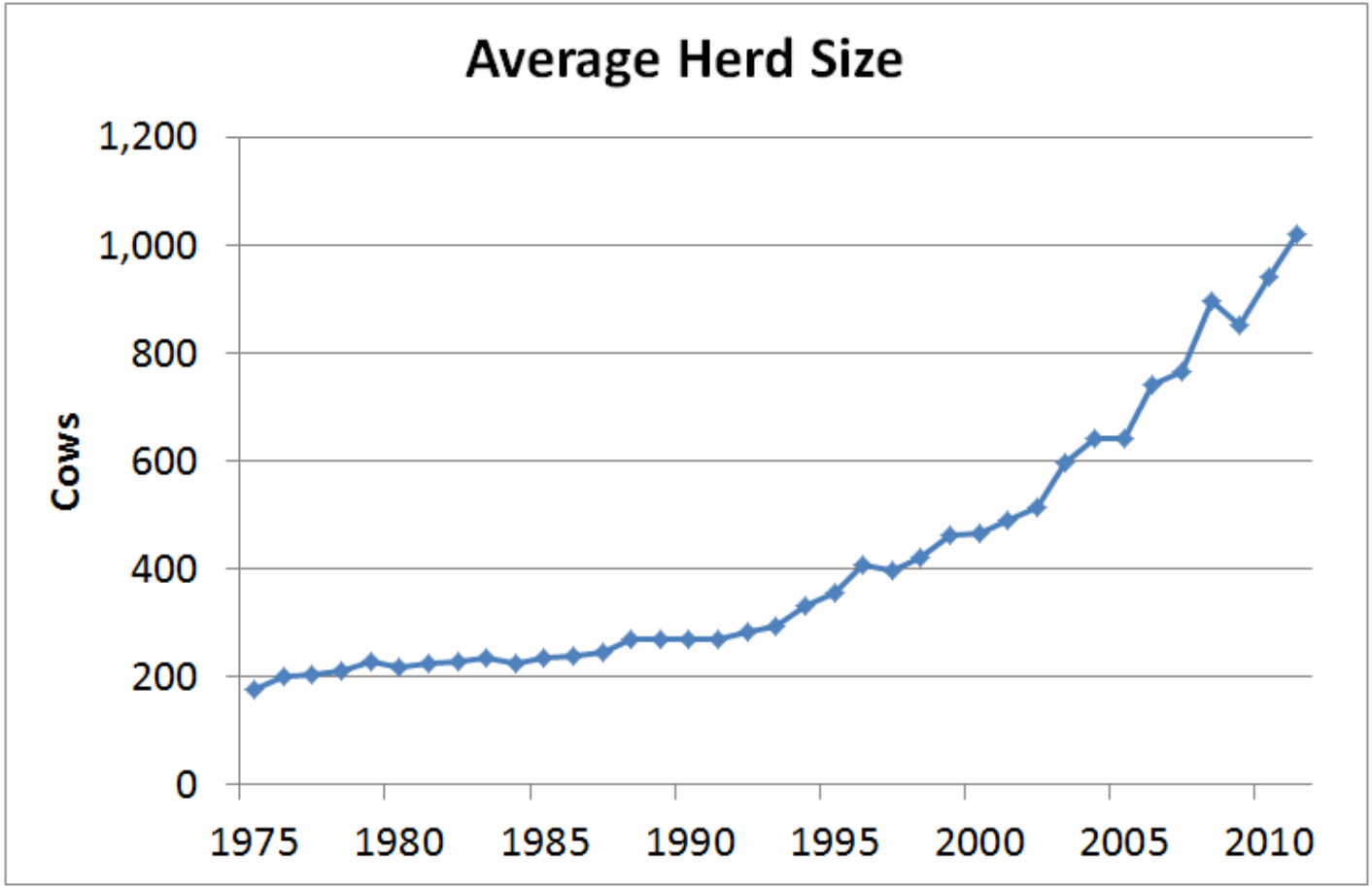
Cohort Analysis: A unique method to conduct analyses of subgroups in dairy herds

S.C. Smith

DHI-Provo; a division of
DHI Computing Service, Inc.
Provo, Utah, USA

DHI-PROVO

Consolidation in the Dairy Industry



Herds processed at DHI-Provo

DHI-PROVO

9,800 Cow Dairy

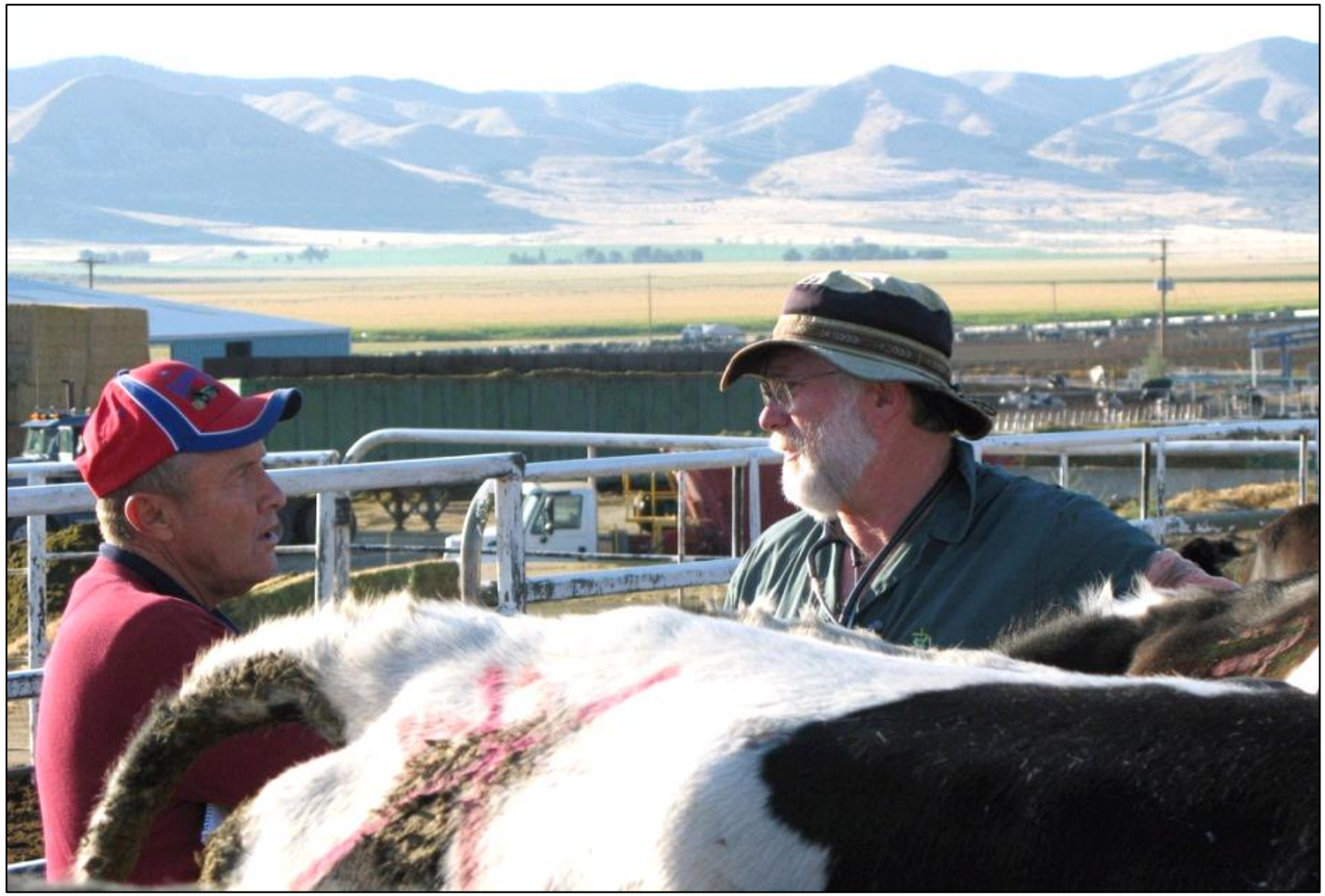
DHI-PROVO

500% Increase in Herd Size

- Dairy producers are using more:
  - Professional consulting services:
    - Feed nutritionists
    - Reproduction specialists
    - Udder health specialists
  - Specialized labor:
    - Maternity and fresh cows
    - Reproduction
    - Feeding
    - Milking
    - Young stock raising

DHI-PROVO

Dairy Producers and Consultants



DHI-PROVO

Traditional Herd Summary

Herd	HS	HERD SUMMARY	P Str ALL	DHI-PROVU	Owner or Name of Dairy	Type of Record DHIR-APCS	Test Date 5-01-12

LACT	Cows in Herd	Average for All Cows: Cow Months	% DIM	Milk	% Fat	Fat	% S/P	S/P	3.5 FCM
1	393	378	82	58.8	3.65	2.15	3.11	1.83	60.2
2	283	274	83	73.8	3.81	2.81	3.06	2.26	77.4
3	392	380	86	80.6	3.79	3.05	3.03	2.44	84.3
T	1068	1032	84	70.8	3.75	2.66	3.06	2.17	73.7

LACT	Cows in Milk	Average For Milking Cows: Cows Mths	Milk	Fat	S/P	3.5 FCM
1	315	309	72.0	2.63	2.24	73.8
2	233	227	88.8	3.38	2.72	93.2
3	338	328	93.3	3.53	2.83	97.6
T	886	864	84.5	3.17	2.59	88.0

LACT	LTD Days In Milk: AVG DIM	< 90	90-180	181-305	> 305	DRY
1	178	19	24	26	10	20
2	186	18	24	29	11	18
3	181	18	24	36	7	14
T	181	19	24	31	10	17

LACT	Previous Days Dry: AVG	48 <Opt	60 Opt	72 >Opt
1				
2	65	2	243	40
3	71	5	264	138
T	69	7	507	178
		1 %	73 %	26%

LACT	No. of Cows In Herd Without: Birth Date	Lact. No.	Reg. or E.T. & Breed: Cow	Sire	Dam	Stat Dates	Life Rec	% Use
1			2		4			99
2					1			99
3			6		7		1	97
T	%	%	8	%	12	%	1	98
			1 %		1 %			

LACT	Somatic Cell Summary: Low 0-4	Med 5-6	High 7-9	% L	% M	% H	Avg L2	Avg SCC	30 Day Loss	Chg. SCS %UP	Chg. SCS %DN	1st Test	45-180	181-305	>305
1	283	18	7	92	6	2	2.1	122	.85	4	2	3.5	1.8	2.0	2.7
2	198	15	7	90	7	3	2.1	134	1.86	5	3	1.8	1.6	2.5	3.0
3	253	30	26	82	10	8	2.7	278	3.74	8	7	2.3	2.2	3.2	2.8
T	734	63	40	88	8	5	2.3	190	2.49	6	4	2.7	1.9	2.6	2.8

LACT	% Distribution of Peak Production by Pounds: No. Cows	<51	51-65	66-80	81-95	96-110	111-125	>125	Peaked: Before 90 DIM	30D FCM CHG
1	335		6	40	45	8	1		81.4	1.9
2	243				3	21	44	32	118.9	6.2
3	342				2	11	29	58	127.1	7.2
T	920		2	15	18	13	23	30	111.0	5.0

LACT	Peak Production Days: AVG	39 & Bef	49 Peak	59 & Aft
1	68	97	53	185
2	34	169	50	24
3	40	194	94	54
T	49	460	197	263
		50 %	21 %	29%

LACT	Cow PTA Summary: No. Cows	Milk	% Fat	Fat	$	Pct life	Pro	% Pro
1	282	501		17	221		14	.01-
2	279	403	.01-	11	192		11	
3	387	329	.01-	9	170		10	
T	948	402	.01-	12	191		12	

LACT	Extrapolated 305 Day Average: Actual: Milk	Fat	S/P	Mature Equivalent: Milk	Fat	S/P
1	20473	803	831	27074	1027	860
2	26175	1082	797	30856	1246	979
3	27697	1150	840	28863	1189	904
T	24636	1004	752	28733	1145	907

LACT	Change In Avg. Relative Value: Milk	Fat	S/P	Rel Val
1	1400-	122-	91-	91
2	2385	97	116	108
3	367	39	24	103
T	252	5-	6	100

LACT	Interval Between Breedings: <18	18-24	25-35	36-48	>48	Avg	Total	Heats: % Det	% Clv	Calving Interval: Last	Next
1	12	37	13	20	18	33	366	68	30		12.8
2	13	29	18	24	15	33	375	69	27	12.7	13.4
3	18	28	16	21	17	31	568	68	25	13.3	13.4
T	15	31	16	22	17	32	1309	68	27	13.0	13.2

LACT	Dim at First Breeding: AVG	50 Opt&<	61 Opt+11	71 Opt&>
1	68	1	232	88
2	71	2	140	88
3	70	4	197	120
T	70	7	569	296
		1 %	65 %	34%

LACT	Sire PTA Summary: No. Cows	Milk	% Fat	Fat	$	Pct life	Pro	% Pro
1	391	741		28	329	58.0	21	.01-
2	280	597	.01-	20	275	49.3	17	
3	391	543		19	233	45.2	17	
T	1062	630		23	279	51.0	19	

LACT	Test Day Totals: Production: Milk	Fat	S/P	No. Cows: Dry	In Milk
1	22991	841	713	78	315
2	20958	796	637	50	233
3	31777	1204	961	54	338
T	75726	2841	2311	182	886

LACT	Prod. Since 2 yr: Milk	Fat	S/P	%PC 80 DIM	Rep Indx
1	91.5	3.6	2.8	74	
2	73.9	2.9	2.3	68	
3	69.6	2.8	2.2	56	
T	78.7	3.1	2.4	66	19

LACT	Cows Over 75 Days Since Last Bred or Pregnant: No. of Times Bred: 1	2	3	4&+	Total Times Bred	Serv/ Conc	No. Pg Cows	% 1st Conc
1	114	50	35	43	540	2.23	242	47
2	53	45	25	39	413	2.55	162	33
3	65	41	27	57	525	2.76	190	34
T	232	136	87	139	1478	2.49	594	39
	39 %	23 %	15 %	23 %				

LACT	Days Open: AVG	109 & Less	130 Opt	151 & Over
1	105	224	53	55
2	121	134	53	61
3	125	171	60	104
T	117	529	166	220
		58 %	18 %	24%

LACT	Service Sire PTA Summary: No. Cows	Milk	% Fat	Fat	$	Pct life	Pro	% Pro
1	325	1272	.01	48	627		43	.02
2	226	1237	.01	49	621		42	.02
3	325	1167	.02	48	613		41	.02
T	876	1224	.01	48	620		42	.02

LACT	Cows Expected to Calve: MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
1	3	8	12	1	3	12	12	15	15	
2	31	31	28	32	44	22	19	35	64	12
3	34	37	37	40	74	54	36	56	154	13
T	88	76	77	73	121	88	67	106	233	25
	68	11	34-	11-	67	2-	141-	Cows in Milk		

LACT	Grain Fed: Per Cow	Total
1	20	7911
2	30	8447
3	33	13009
T	27	29367

LACT	Cows In Milk Opt + 30 Days Assumed Not Preg: No. of Times Bred: 1	2	3	4&+	Total Times Bred	Serv/ Conc	No. Pg Cows (Ex)	Not Bred 71 DIM
1	43	16	5	9	142	1.95	7	11
2	17	16	15	18	192	2.91		18
3	41	24	23	37	360	2.88	18	14
T	101	56	43	64	694	2.63	25	43
	38%	21 %	16 %	24 %			2%	4%

LACT	% 1st SV	% PG 80 DIM	Feed Cost: Cow/ Day	Cwt. Milk
1	35	63		
2	35	61		
3	38	64		
1	39	63		
2	39	59		
3	41	60		
1	40	59		
2	40	59		
3	39	58		
1	39	63		
2	39	68		
3	39	65		
1	39	66		
2	39	62		

LACT	Herd Totals: Cow Days: In Herd	In Milk	Cwt. Milk	Fat	S/P
1	29701	26148	21597	84130	66646
2	33096	29180	24492	97959	75618
3	34595	30010	25117	99252	73638
1	33859	28992	23580	92373	70322
2	35266	30247	22479	94838	67476
3	30659	26109	19272	81713	60432
1	33613	28849	21669	86916	68546
2	34143	29330	23055	97381	74007
3	29824	25531	19763	82543	61175
1	33276	28999	23097	93439	71548
2	34586	30038	24777	105039	79518
3	29818	25232	21889	86678	68502
1	30956	25922	21909	82201	67117
2	393691	338439	271100	1100333	837899

LACT	Cows Calving During Previous Year: MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
1		41	37	38	29	27	29	34	33	43	28	35
2		22	28	26	26	21	31	18	30	19	25	19
3		32	24	47	53	44	51	27	35	38	31	22
T		95	89	111	108	92	111	79	98	100	84	76

LACT	Abortions: Our Mths	< 152D	> 151D	No. Cows Sold Beef: 3 Lprd	4 Rprd	5 Oth	7 Udr	Total	Age At 1st Calving	Wtd. Avg. Feed Cost
1		1		5	2			7	24.3	5.85
2	2		3		1	1		2	37.2	7.38
3	2	1	2		4	5	2	11	63.0	7.70
T	4	2	5	5	7	6	2	20	41.9	6.96

TYPE	TYPE	Test Date MM	DD	VER	AM PM	Dys On Tst	No of Rec	% Day 3X
12	22	05-03		A		28	1091	
11	22	05-31		A		31	1088	
10	22	07-05		A		32	1111	
9	22	08-02		P		31	1118	
8	22	09-06		A		32	1142	
7	22	10-04		A		28	1133	
6	22	11-01		A		31	1126	
5	22	12-06		A		32	1120	
4	22	01-03		A		28	1108	
3	22	01-31		A		31	1098	
2	22	03-06		P		32	1120	
1	22	04-03		A		28	1112	
0	22	05-01		A		29	1092	
Herd Avg. or Total						365	1113	
COUNTY #H				72	#C	5192		

LACT	Herd Average: Cow Mths	% DIM	DIM	Milk	% Fat	Fat	% S/P	S/P
12	990	88	181	72.7	3.90	2.83	3.09	2.24
11	1103	88	184	74.0	4.00	2.96	3.09	2.28
10	1153	87	184	72.8	3.95	2.87	2.93	2.13
9	1129	86	186	69.6	3.92	2.73	2.98	2.08
8	1176	86	180	63.7	4.22	2.69	3.00	1.91
7	1022	85	174	62.9	4.24	2.67	3.14	1.97
6	1120	86	174	64.5	4.01	2.59	3.16	2.04
5	1138	86	174	67.5	4.22	2.85	3.21	2.17
4	994	86	175	66.3	4.18	2.77	3.10	2.05
3	1109	87	177	69.4	4.05	2.81	3.10	2.15
2	1153	87	175	71.6	4.24	3.04	3.21	2.30
1	994	85	173	73.4	3.96	2.91	3.13	2.30
0	1032	84	181	70.8	3.75	2.66	3.06	2.17
Herd Avg. or Total	1079	86	178	25134	4.06	1020	3.09	777
COUNTY #H	726	87	193	23678	3.65	865	3.11	743

LACT	Somatic Cell Summary: %L 0-4	%M 5-6	L2	Avg SCC	$Loss Per Cow
12	88	7	2.1	166	2.01
11	88	9	2.0	156	2.18
10	87	10	2.2	170	2.56
9	87	10	2.2	200	2.61
8	88	9	2.2	164	2.35
7	87	9	2.7	234	2.70
6	87	9	2.5	206	2.69
5	88	10	2.2	162	2.38
4	88	10	2.5	188	2.73
3	88	9	2.3	174	2.38
2	88	9	2.3	166	2.42
1	88	8	2.3	188	2.45
0	88	8	2.3	190	2.49
Herd Avg. or Total	87	9	2.3	182	2.50
COUNTY #H	87	10	2.5	176	

LACT	Reproduction: Bird Rpt	Srv Conc	% H
12	237	2.53	71
11	251	2.51	70
10	261	2.48	70
9	235	2.46	70
8	349	2.47	70
7	312	2.41	69
6	282	2.45	69
5	322	2.53	69
4	247	2.52	69
3	252	2.55	69
2	220	2.54	69
1	259	2.52	68
0	267	2.49	68
Herd Avg. or Total	3257	2.49	69
COUNTY #H	197	2.54	68

LACT	Total Number of Cows: In Herd	Reg.	Entering Herd: 1-Lac	2-Lac	Sold for Beef: 3-Lprd	4-RPro	5-Oth	7-Udr	Leaving Herd: 8-Beef	9-Died	7-Dairy	%	%L	RV
12	1056	1001	19		8	10	6	4	28	7		3	1	94
11	1064	1009	32		10	7	1		18	6		2	1	84
10	1085	1032	47		1	10	6	5	22	4		2		94
9	1095	1043	33		2	12	1	5	20	3		2		97
8	1108	1058	47		1	13	9	4	27	7		3		93
7	1099	1052	25			22	7		29	5		3		91
6	1090	1044	27		8	19	6	1	34	2		3	1	94
5	1069	1028	30		9	17	9	5	40	11		5	1	96
4	1068	1028	37		2	28	2	1	31	7		3		96
3	1068	1027	30		4	15	4	2	25	5		3		89
2	1089	1029	52		3	12	4	1	20	11		3		95
1	1060	990	23		13	28	7	2	50	2		5	1	88
0	1068	980	32		5	7	6	2	20	4		2		86
Herd Avg. or Total	1080	1026	414		57	187	61	28	337	67		36	5	92
COUNTY #H	703	134	45%	1%	12%	6%	8%	3%	28%	5%	4%	38	12	92

* If Less Than 1%

HS

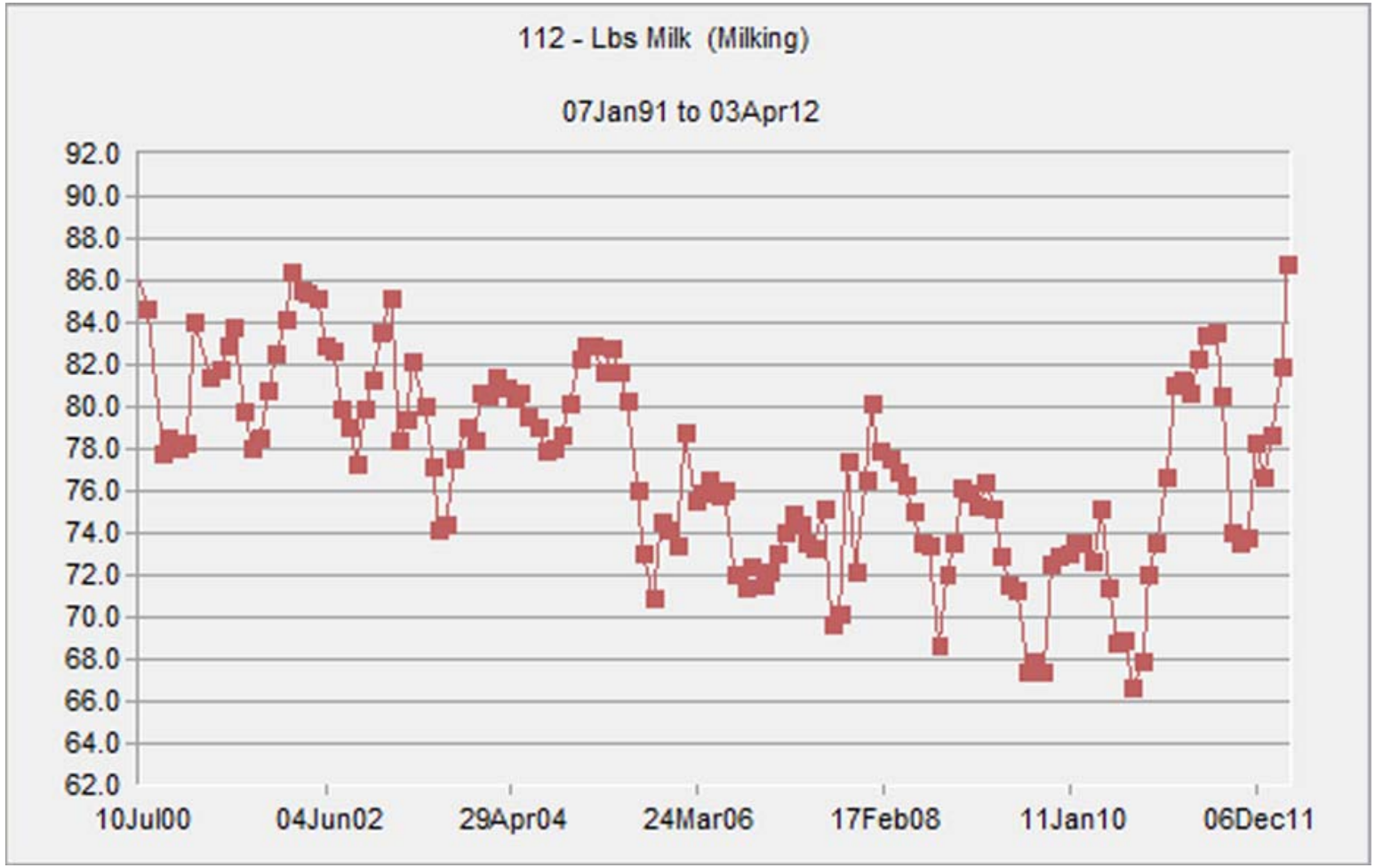
DHI-PROVO

Characteristics of Traditional Herd Summary Reports

- Statistics are generally calculated on:
  - Whole herd
  - Lactation groups
- Statistics are based on:
  - Current and prior test day values
  - Reproduction events in the lactation
  - 365 day Rolling Herd Average (RHA) values
- As data is aggregated over time and data sets get larger the statistics become more “stable”

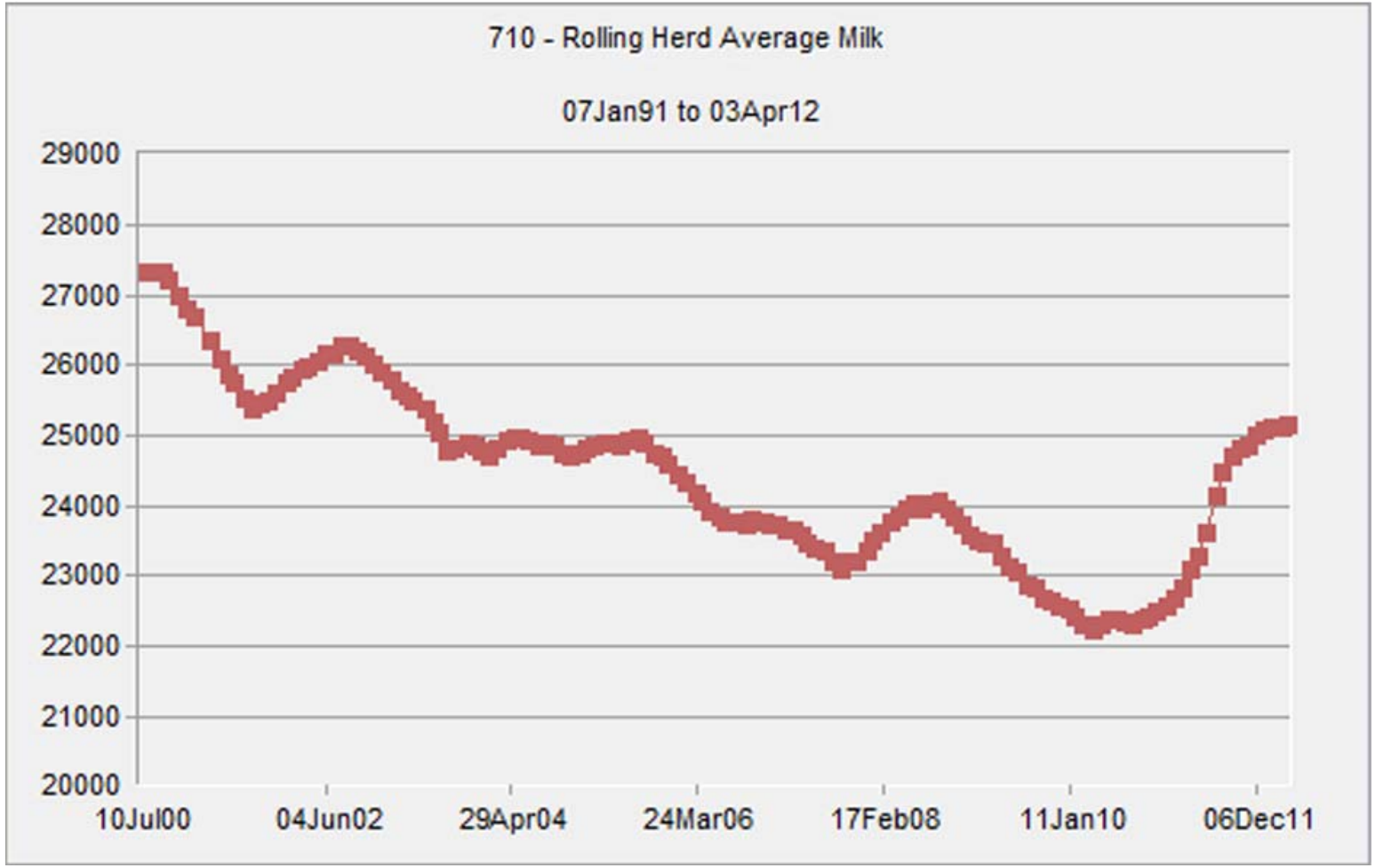
DHI-PROVO

Current Test Date Milk



DHI-PROVO

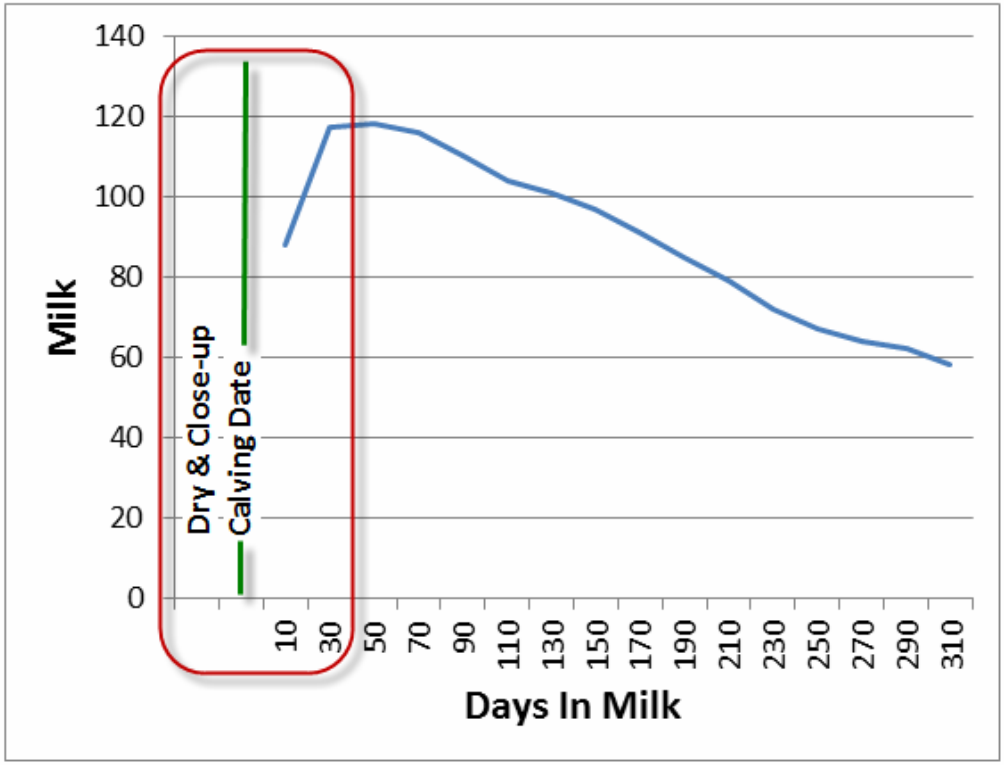
365 Day Rolling Herd Average Milk



DHI-PROVO

Transition Cow Management

- A cow's whole lactation is influenced by the dry, close-up and fresh periods



DHI-PROVO

Transition Cow Management

- Feed Rations:
  - Dry cows
  - Close-ups
  - Fresh cows
- Cow Comfort:
  - Adequate housing and feed bunk space
  - Clean, dry and well-ventilated maternity facilities
  - Grouping and social interaction

DHI-PROVO

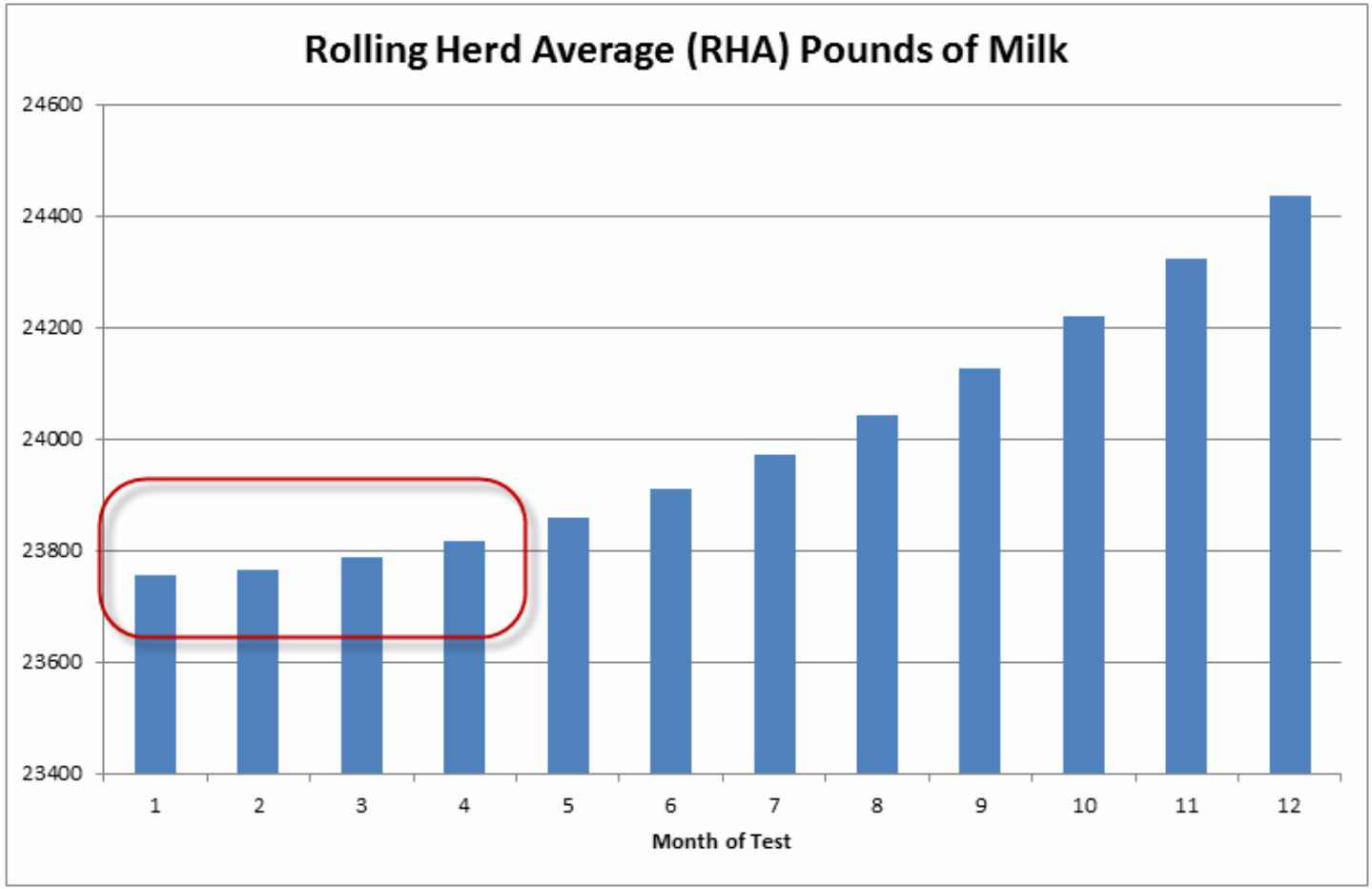
Changes within a Dairy

- Some important changes, such as in the transition program, may affect just a small portion of the herd initially

- It takes time for the whole herd to be influenced by the changes

DHI-PROVO

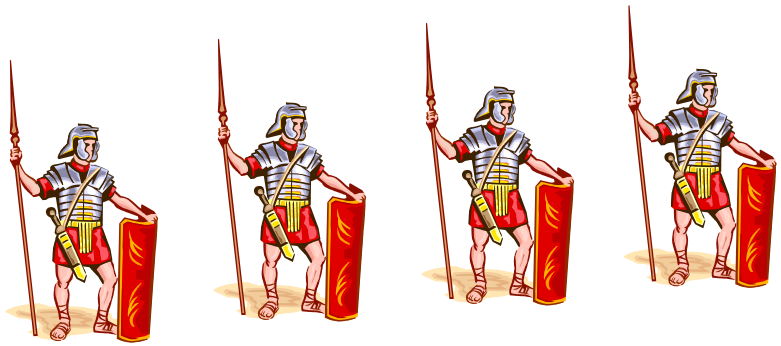
Lag Effect of a Change on the RHA



DHI-PROVO

Cohort

- Group of Roman Soldiers



- Class of school students
- Group of medical research subjects
- Group of cows that calved the same month

DHI-PROVO

Number of Cows Calved by Month

DIM	Data	Apr 12	Mar 12	Feb 12	Jan 12	Dec 11	Nov 11
Lact. All							
Transition	# Calved	35	86	101	101	84	114
Lact. 1							
Transition	# Calved	17	29	43	34	36	31
Lact. 2							
Transition	# Calved	10	24	20	31	18	31
Lact. 3+							
Transition	# Calved	8	33	38	36	30	52

DHI-PROVO

Dry, Close-up and Transition Health

- All statistics in a column are based on the cows that calved that month (Cohort Group)

DIM	Data	Apr 12	Mar 12	Feb 12	Jan 12	Dec 11	Nov 11
Lact. All							
Transition	# Calved	35	86	101	101	84	114
	Prev Days Dry	69	76	74	70	68	65
	Days Close-up	20	21	19	21	22	22
	% DOA's	5.7	10.5	6.9	7.9	10.7	3.5
	% Twins		4.7	4.0	9.2	4.8	2.7
	% Milk Fever		1.2		4.0	1.2	4.4
	% RP				10.9	11.9	7.0
	% DA			3.0	1.0		
	% Mastitis	2.9	3.5	9.9	6.9	6.0	10.5

DHI-PROVO

Dry, Close-up and Transition Health

- Statistics on a row show performance over time

DIM	Data	Apr 12	Mar 12	Feb 12	Jan 12	Dec 11	Nov 11
Lact. All							
Transition	# Calved	35	86	101	101	84	114
	Prev Days Dry	69	76	74	70	68	65
	Days Close-up	20	21	19	21	22	22
	% DOA's	5.7	10.5	6.9	7.9	10.7	3.5
	% Twins		4.7	4.0	9.2	4.8	2.7
	% Milk Fever		1.2		4.0	1.2	4.4
	% RP				10.9	11.9	7.0
	% DA			3.0	1.0		
	% Mastitis	2.9	3.5	9.9	6.9	6.0	10.5

DHI-PROVO

Highlighting

- Green = One standard deviation above the mean
- Yellow = One standard deviation below the mean

DIM	Data	Apr 12	Mar 12	Feb 12	Jan 12	Dec 11	Nov 11	Oct 11
Lact. All								
Transition	# Calved	35	86	101	101	84	114	94
	Prev Days Dry	69	76	74	70	68	65	63
	Days Close-up	20	21	19	21	22	22	21
	% DOA's	5.7	10.5	6.9	7.9	10.7	3.5	7.4
	% Twins		4.7	4.0	9.2	4.8	2.7	3.3
	% Milk Fever		1.2		4.0	1.2	4.4	1.1
	% RP				10.9	11.9	7.0	6.4
	% DA			3.0	1.0			1.1
	% Mastitis	2.9	3.5	9.9	6.9	6.0	10.5	12.8

DHI-PROVO

Milk Production (30 DIM Groups)

DIM	Data	Apr 12	Mar 12	Feb 12	Jan 12	Dec 11	Nov 11	Oct 11	Sep 11	Aug 11
Lact. All										
Transition	# Calved	35	86	101	101	84	114	94	108	111
1-30	# of Weights	0	76	79	87	71	86	69	103	92
	Milk		102.9	93.6	101.2	87.5	105.0	98.6	95.4	90.6
31-60	# of Weights		13	97	74	82	114	82	107	114
	Milk		106.0	103.6	107.6	99.3	107.0	104.4	96.7	93.2
61-90	# of Weights			13	112	67	117	87	84	110
	Milk			101.6	105.2	100.4	101.7	97.7	99.6	88.0
91-120	# of Weights				14	77	94	89	103	93
	Milk				100.1	95.4	97.8	91.0	89.7	88.2
121-150	# of Weights					7	113	76	98	108
	Milk					96.7	95.1	87.9	86.5	81.7
151-180	# of Weights						19	81	73	110
	Milk						92.7	87.3	83.4	77.6

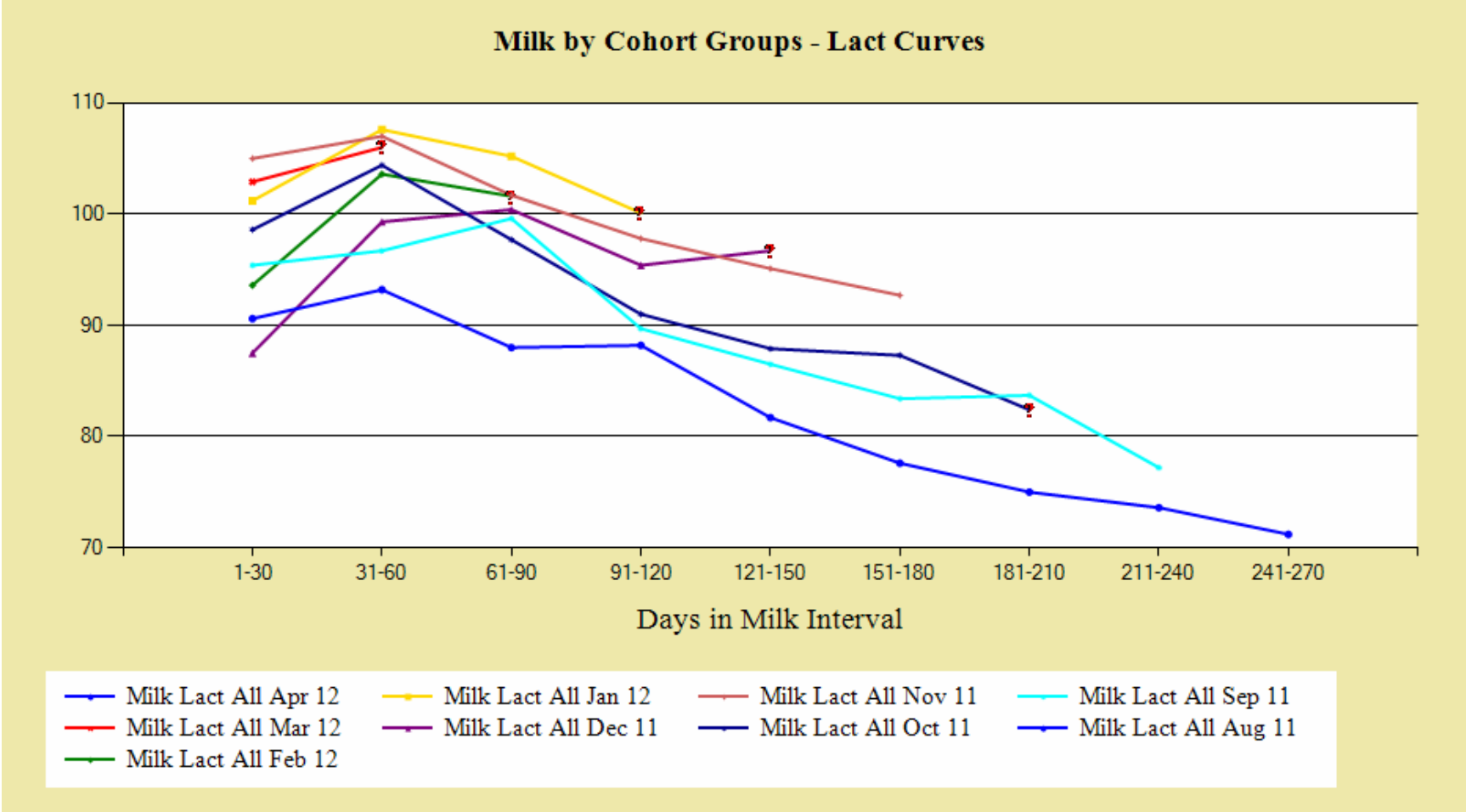
DHI-PROVO

Graphs

"There is no statistical tool that is as powerful as a well-chosen graph." John M. Chambers

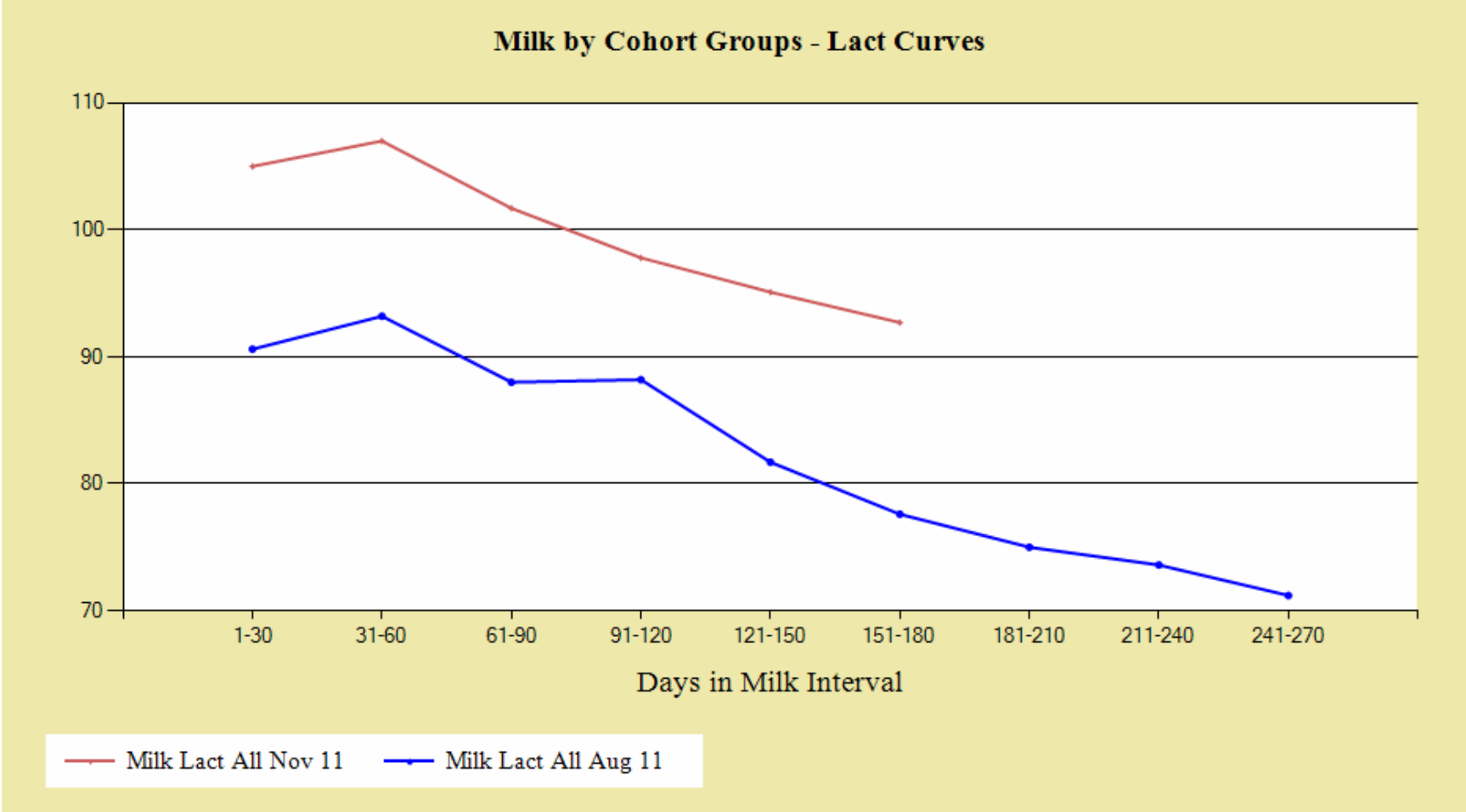
DHI-PROVO

Milk Production: Month of Calving Cohort Groups



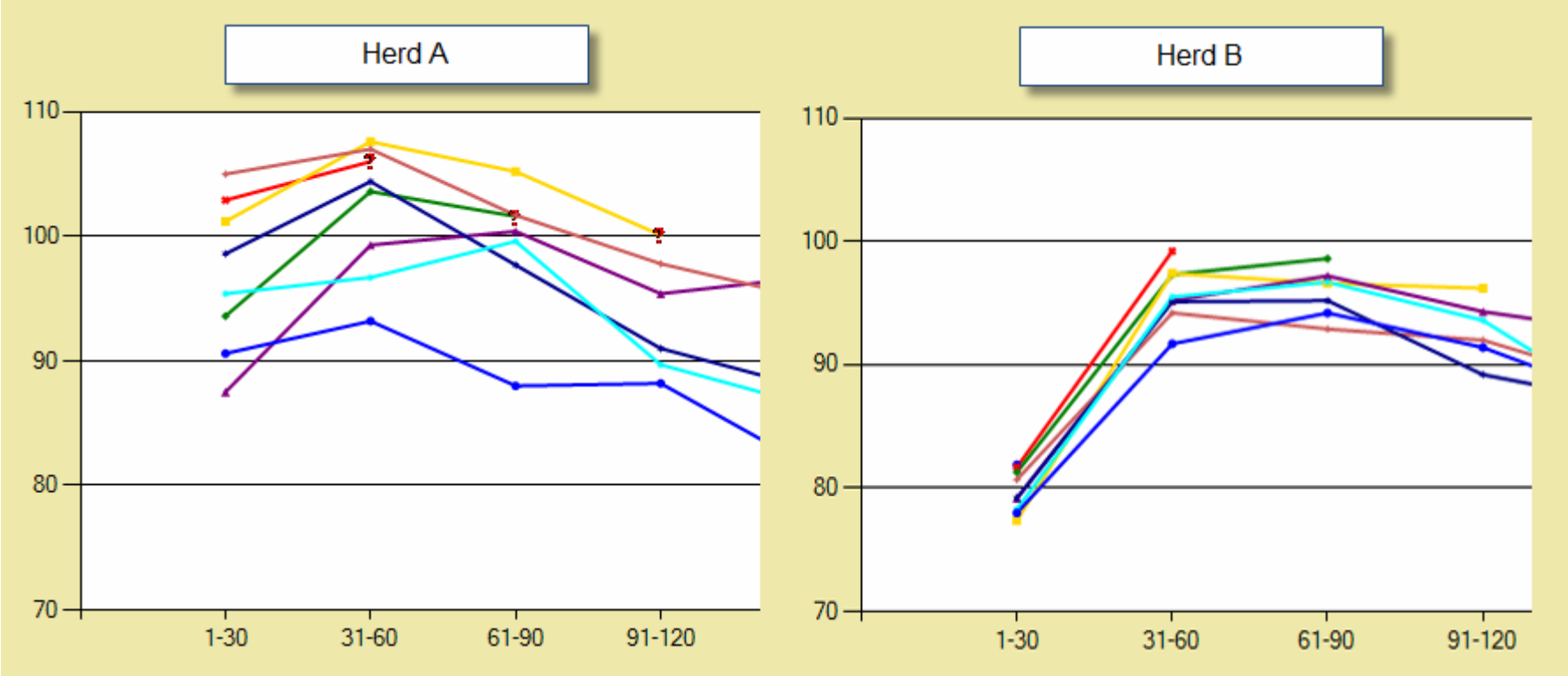
DHI-PROVO

Cohort Groups: Aug. & Nov.



DHI-PROVO

More Variation in Herd A



DHI-PROVO

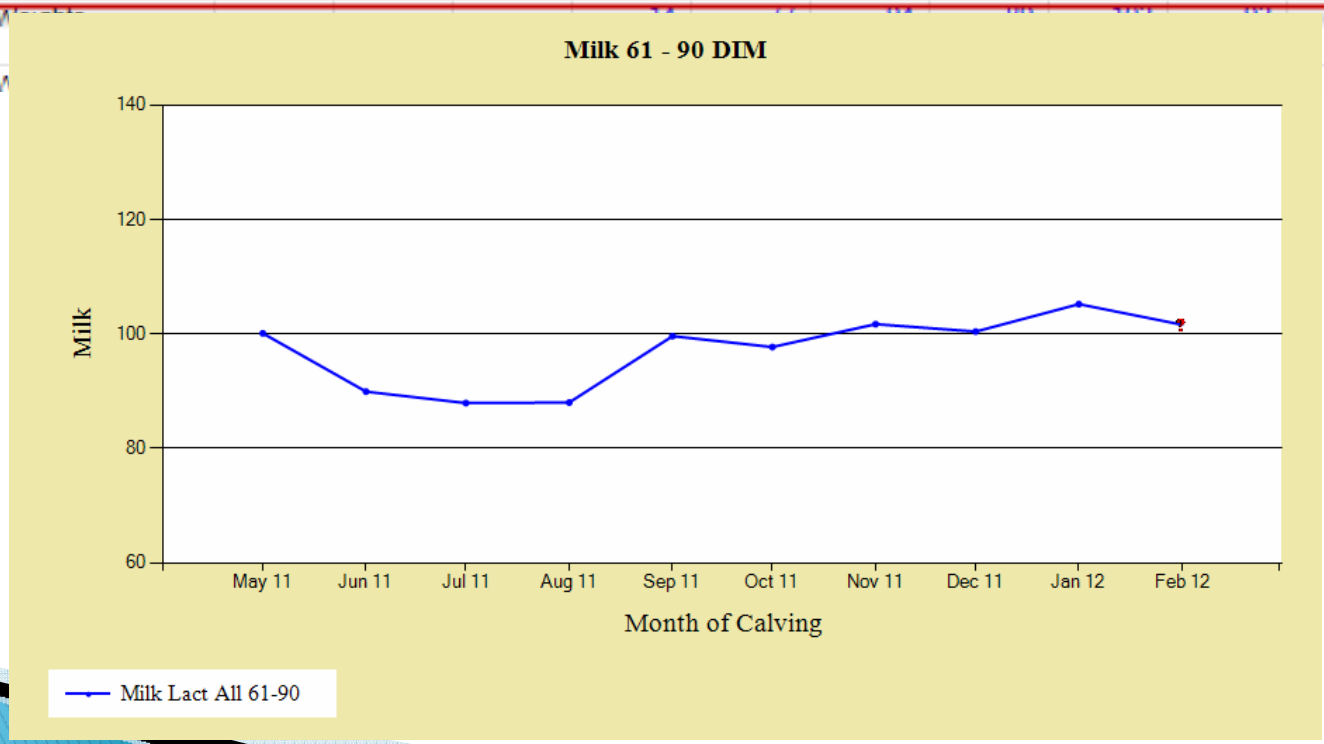
Milk Weights: 61–90 DIM

DIM	Data	Apr 12	Mar 12	Feb 12	Jan 12	Dec 11	Nov 11	Oct 11	Sep 11	Aug 11	Jul 11	Jun
Lact. All												
Transition	# Calved	35	86	101	101	84	114	94	108	111	92	
1-30	# of Weights	0	76	79	87	71	86	69	103	92	77	
	Milk		102.9	93.6	101.2	87.5	105.0	98.6	95.4	90.6	92.8	100
31-60	# of Weights		13	97	74	82	114	82	107	114	72	
	Milk		106.0	103.6	107.6	99.3	107.0	104.4	96.7	93.2	92.5	103
61-90	# of Weights			13	112	67	117	87	84	110	93	
	Milk			101.6	105.2	100.4	101.7	97.7	99.6	88.0	87.9	89
91-120	# of Weights				14	77	94	89	103	93	94	
	Milk				100.1	95.4	97.8	91.0	89.7	88.2	81.1	82
121-150	# of Weights					7	113	76	98	108	68	

DHI-PROVO

Milk Weights: 61–90 DIM

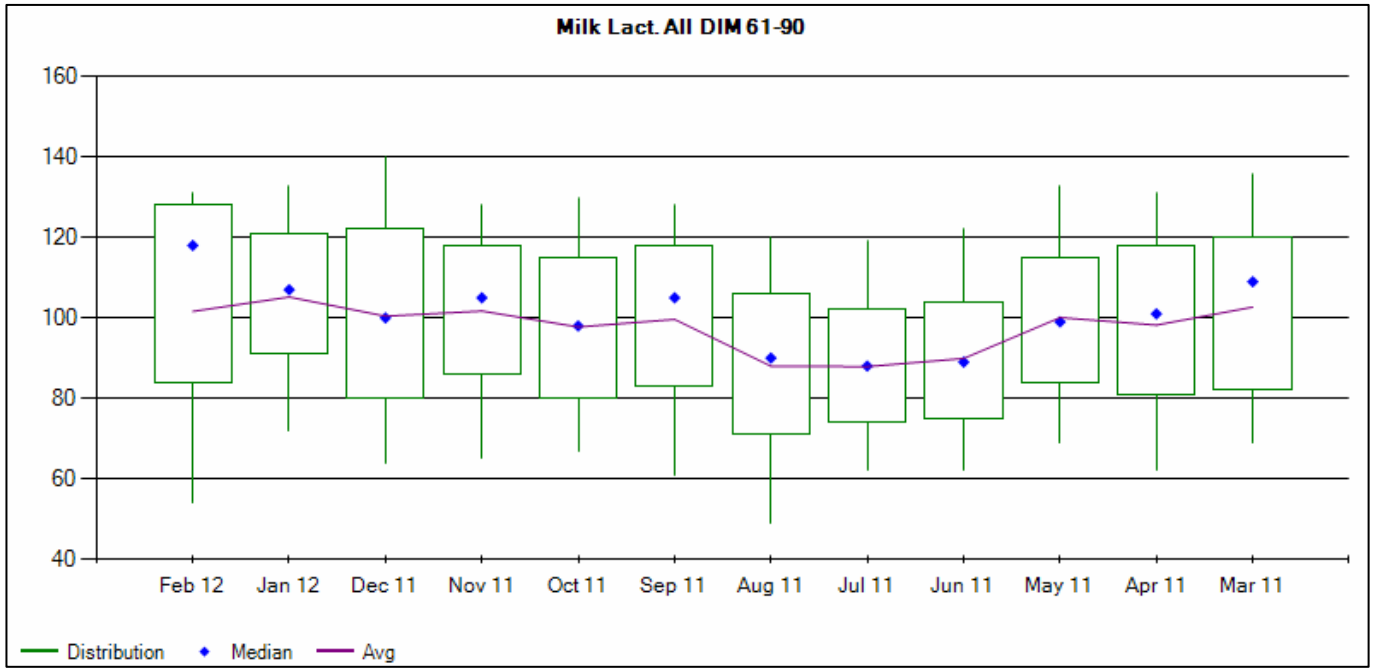
DIM	Data	Apr 12	Mar 12	Feb 12	Jan 12	Dec 11	Nov 11	Oct 11	Sep 11	Aug 11	Jul 11	Jun
Lact. All												
Transition	# Calved	35	86	101	101	84	114	94	108	111	92	
1-30	# of Weights	0	76	79	87	71	86	69	103	92	77	
	Milk		102.9	93.6	101.2	87.5	105.0	98.6	95.4	90.6	92.8	100
31-60	# of Weights		13	97	74	82	114	82	107	114	72	
	Milk		106.0	103.6	107.6	99.3	107.0	104.4	96.7	93.2	92.5	103
61-90	# of Weights			13	112	67	117	87	84	110	93	
	Milk			101.6	105.2	100.4	101.7	97.7	99.6	88.0	87.9	89
91-120	# of W										94	
	Milk										81.1	82
121-150	# of W										68	



DHI-PROVO

Milk Weights: 61–90 DIM (Box Plot)

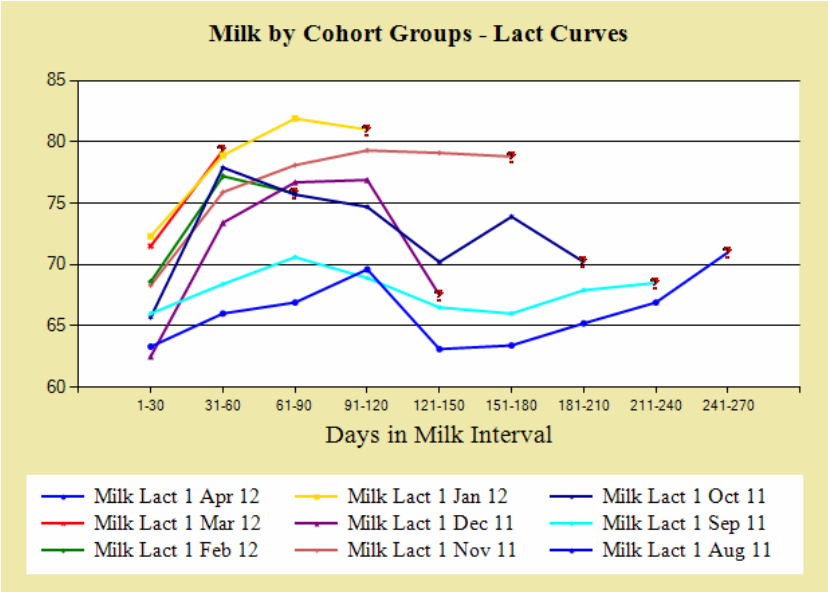
- Statistics over time
- Distribution within each cohort group



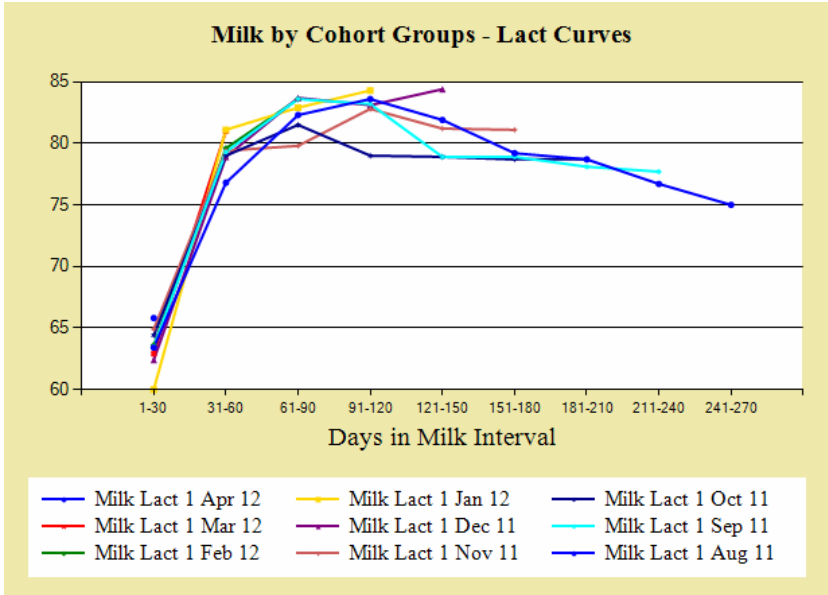
DHI-PROVO

Lactation 1

Herd A



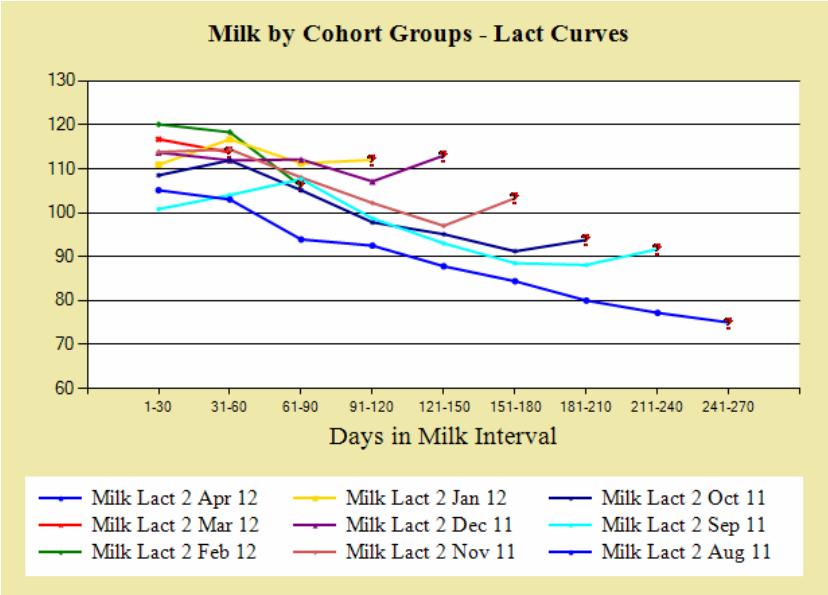
Herd B



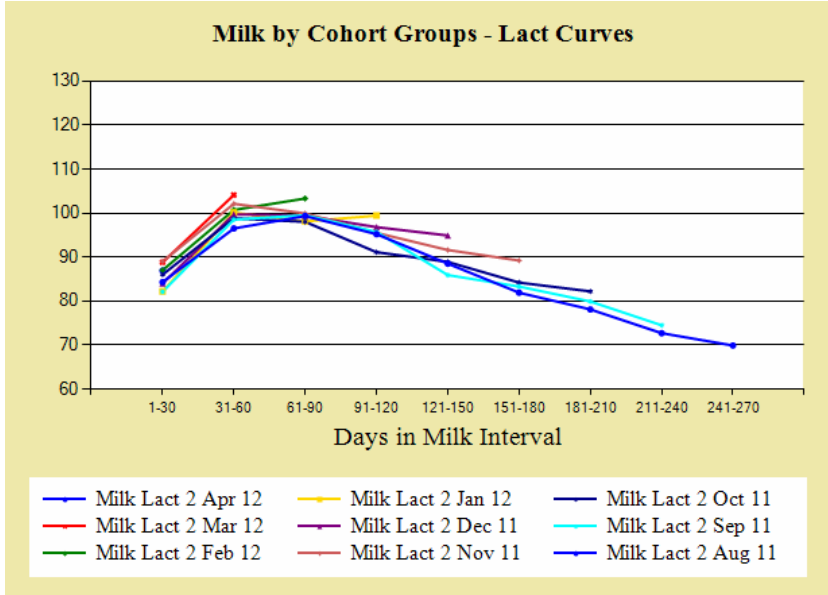
DHI-PROVO

Lactation 2

Herd A



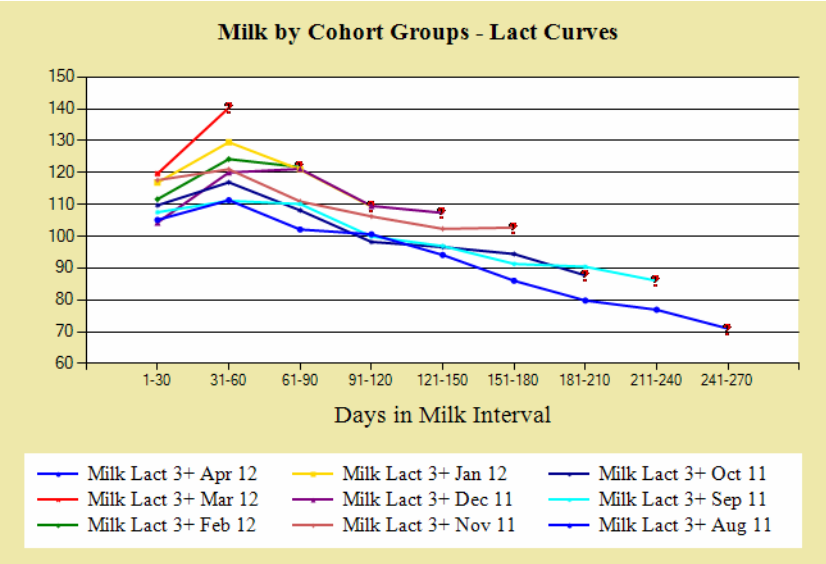
Herd B



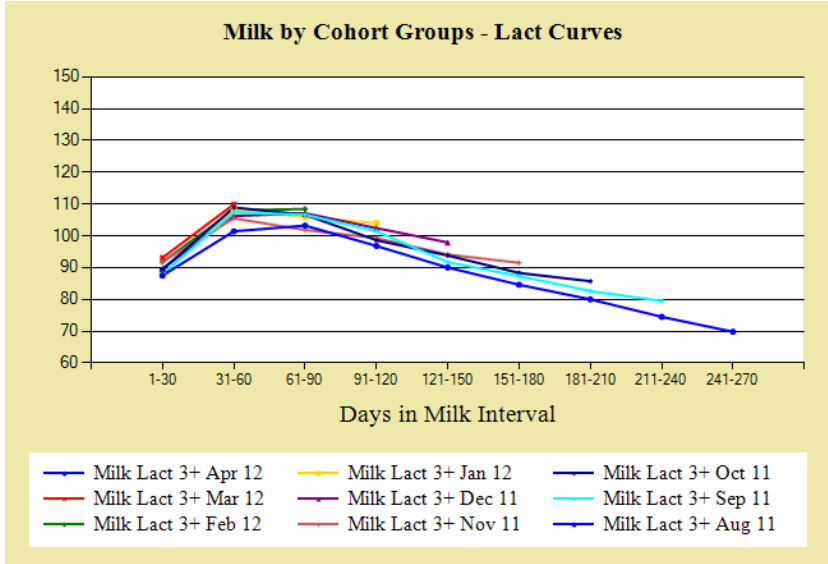
DHI-PROVO

Lactation 3+

Herd A

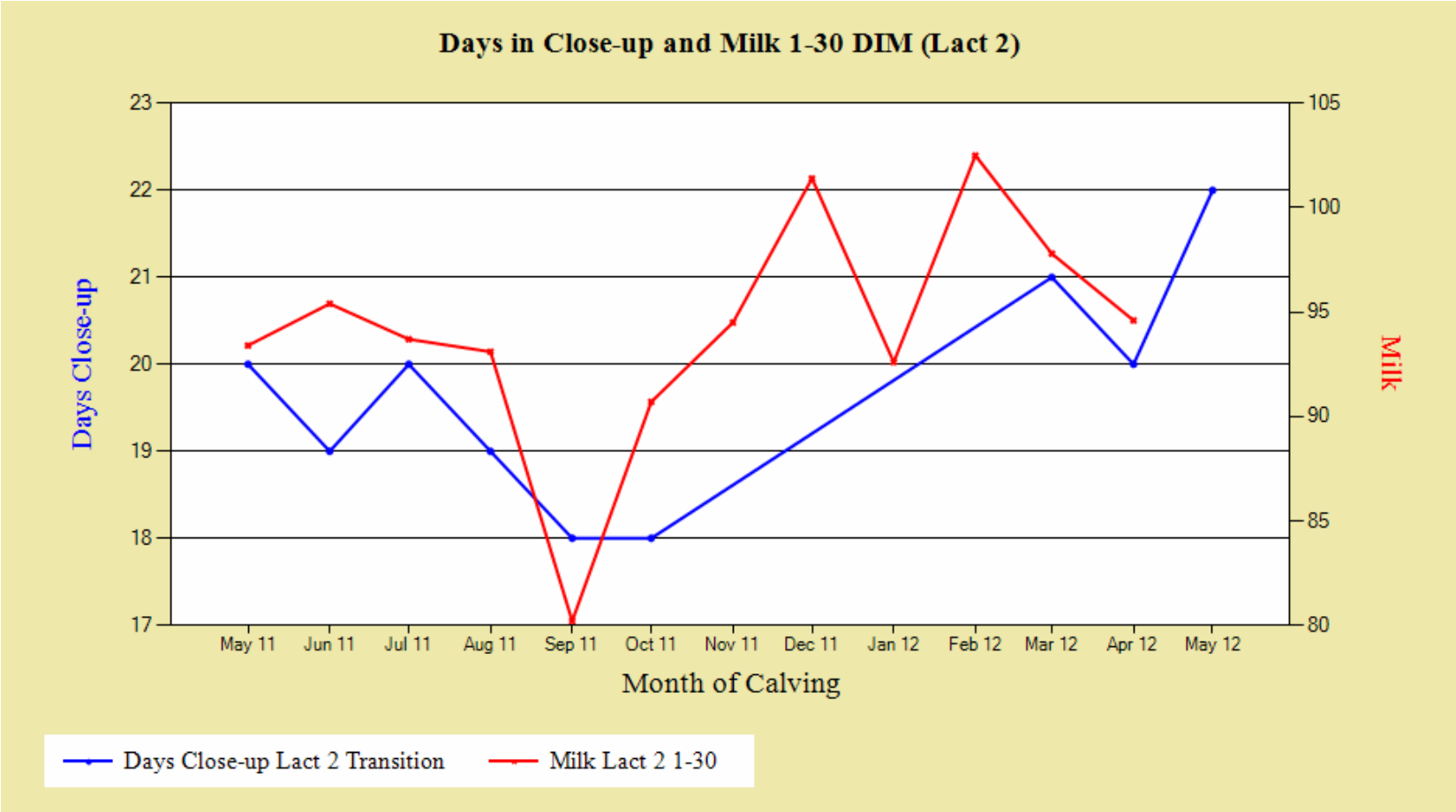


Herd B



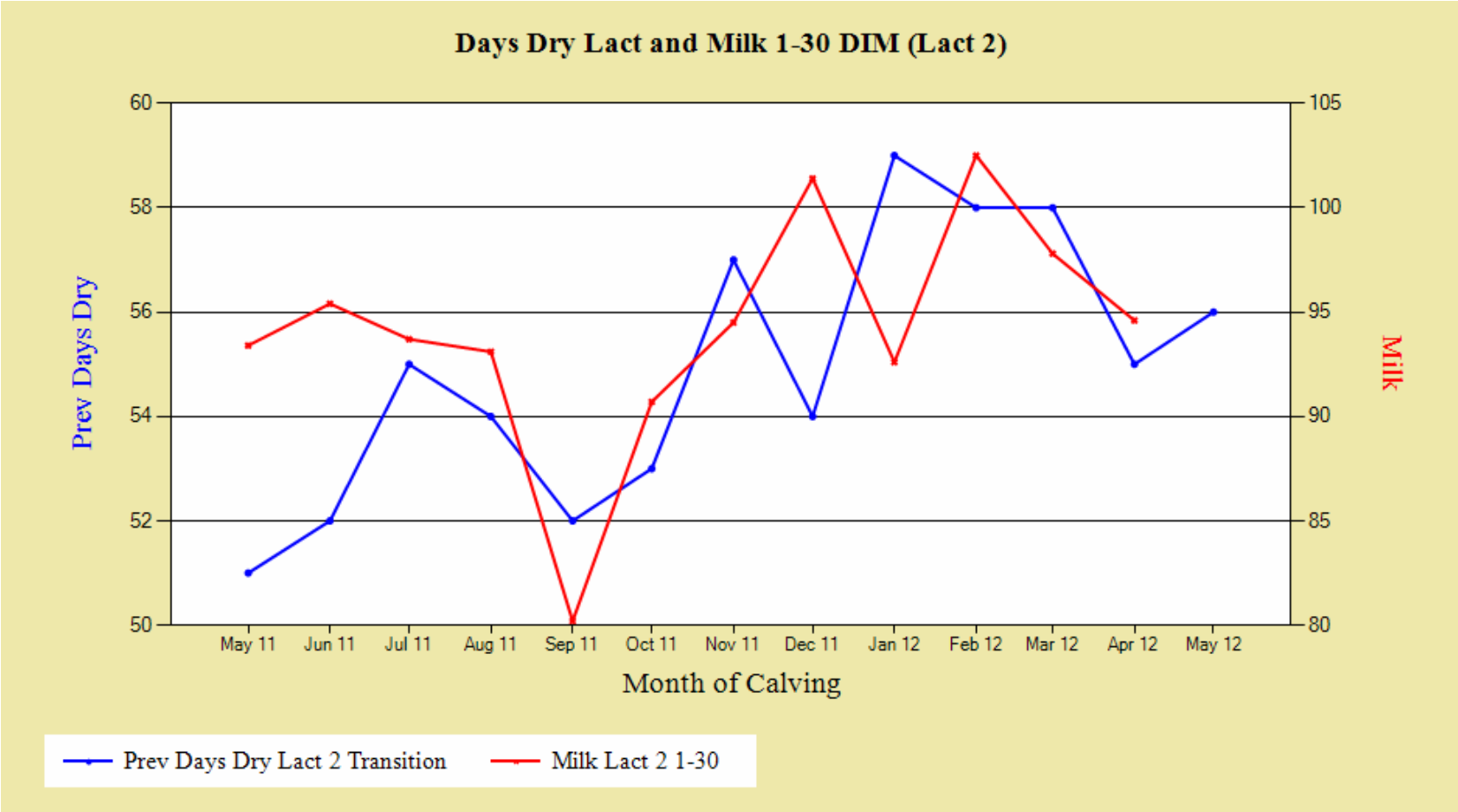
DHI-PROVO

Days in Close-up and Milk 1-30 DIM



DHI-PROVO

Previous Days Dry and Milk 1-30 DIM



DHI-PROVO

Quarterly Cohort Groups

- Useful for smaller herds

DIM	Data	Apr 12	Jan 12	Oct 11	Jul 11	Apr 11	Jan 11
Lact. All							
Transition	# Calved	19	89	126	96	109	30
	Prev Days Dry	53	53	52	46	49	53
	% DOA's	21.1	5.6	13.5	1.0	10.1	3.3
	% Twins		4.8	0.9		3.1	3.4
	305 ME Milk	22,017	24,100	25,758	26,717	27,075	27,776

DHI-PROVO

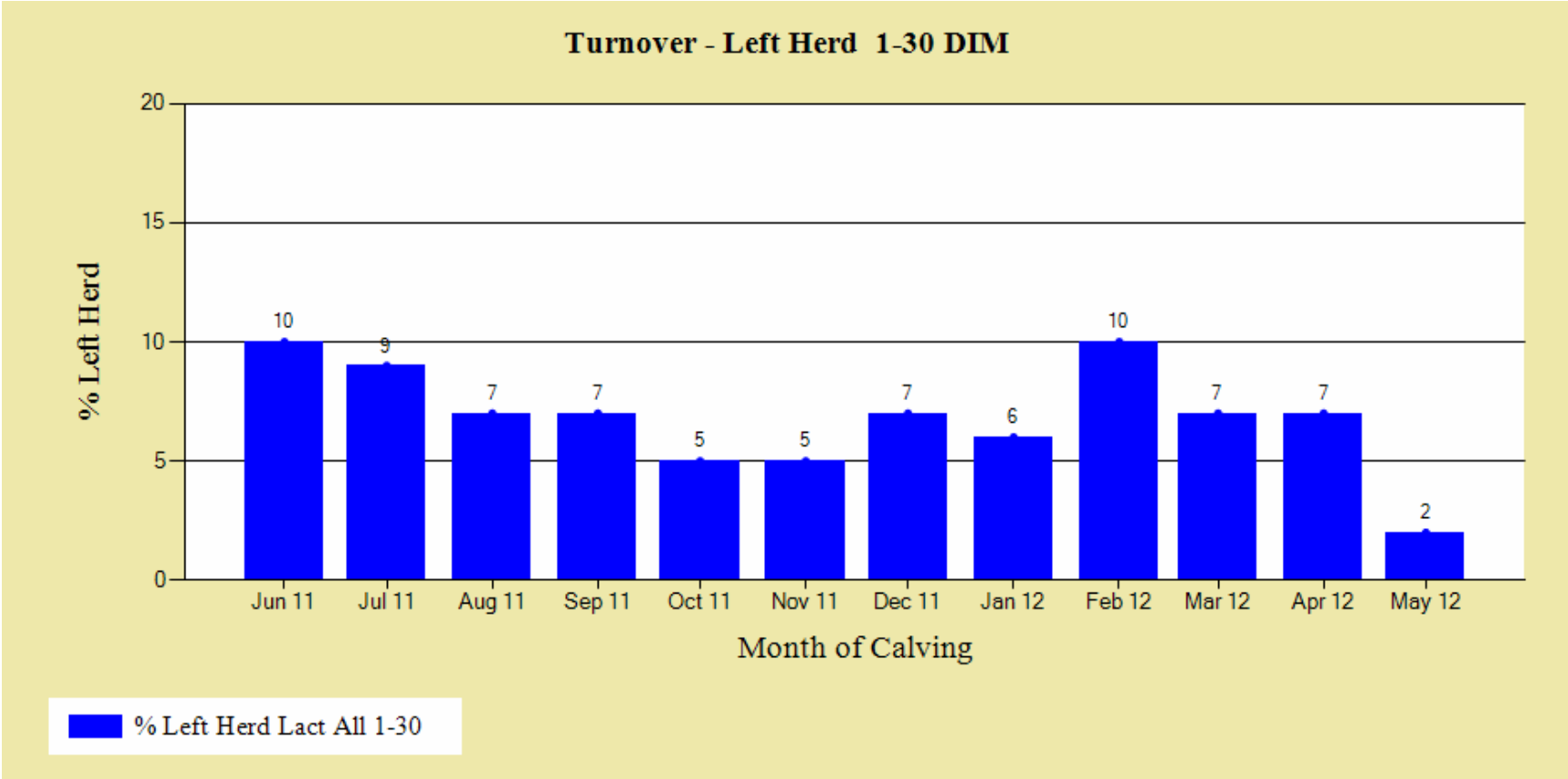
Weekly Cohort Groups

- Provide more detail for larger herds

DIM	Data	May 13	May 06	Apr 29	Apr 22	Apr 15	Apr 08	Apr 01	Mar 25	Mar 18	Mar 11	Mar 04	Feb 26
Lact. All													
Transition	# Calved	28	164	172	176	175	156	188	173	190	155	192	168
	% DOA's		4.3	8.7	10.2	6.9	6.4	4.3	5.2	3.2	11.0	5.7	6.5
	% Twins			1.9	0.6	0.6	3.4	0.6	1.8	3.3	0.7	1.1	2.5
	% Milk Fever				0.6	0.6		1.6		1.1			1.8
	% RP	3.6	2.4						4.0	0.5	2.6	2.1	1.2
	% DA			0.6		1.1	0.6	0.5	1.7	0.5	0.6	0.5	1.2
Lact. 1													
Transition	# Calved	10	58	78	74	62	57	78	66	64	57	66	57
	% DOA's		10.3	17.9	20.3	17.7	12.3	7.7	10.6	4.7	21.1	7.6	8.8
	% Twins			1.3	1.4		3.5		1.5			1.5	3.6
	% Milk Fever												
	% RP										1.8		1.8
	% DA						1.8		3.0		1.8		
Lact. 2													
Transition	# Calved	12	52	43	41	43	46	46	37	48	52	53	40
	% DOA's			2.3	4.9		4.3			2.1	5.8	3.8	7.5
	% Twins			2.4			2.3		2.8	6.4			
	% Milk Fever				2.4					2.1			2.5
	% RP	8.3	1.9						2.7		1.9	3.8	2.5
	% DA							2.2				1.9	2.5
Lact. 3+													
Transition	# Calved	6	54	51	61	70	53	64	70	78	46	73	71
	% DOA's		1.9		1.6	1.4	1.9	3.1	2.9	2.6	4.3	5.5	4.2
	% Twins			2.3		1.5	4.3	1.7	1.4	4.2	2.2	1.5	2.9
	% Milk Fever					1.4		4.7		1.3			2.8
	% RP		5.6						8.6	1.3	4.3	2.7	
	% DA			2.0		2.9			1.4	1.3			1.4

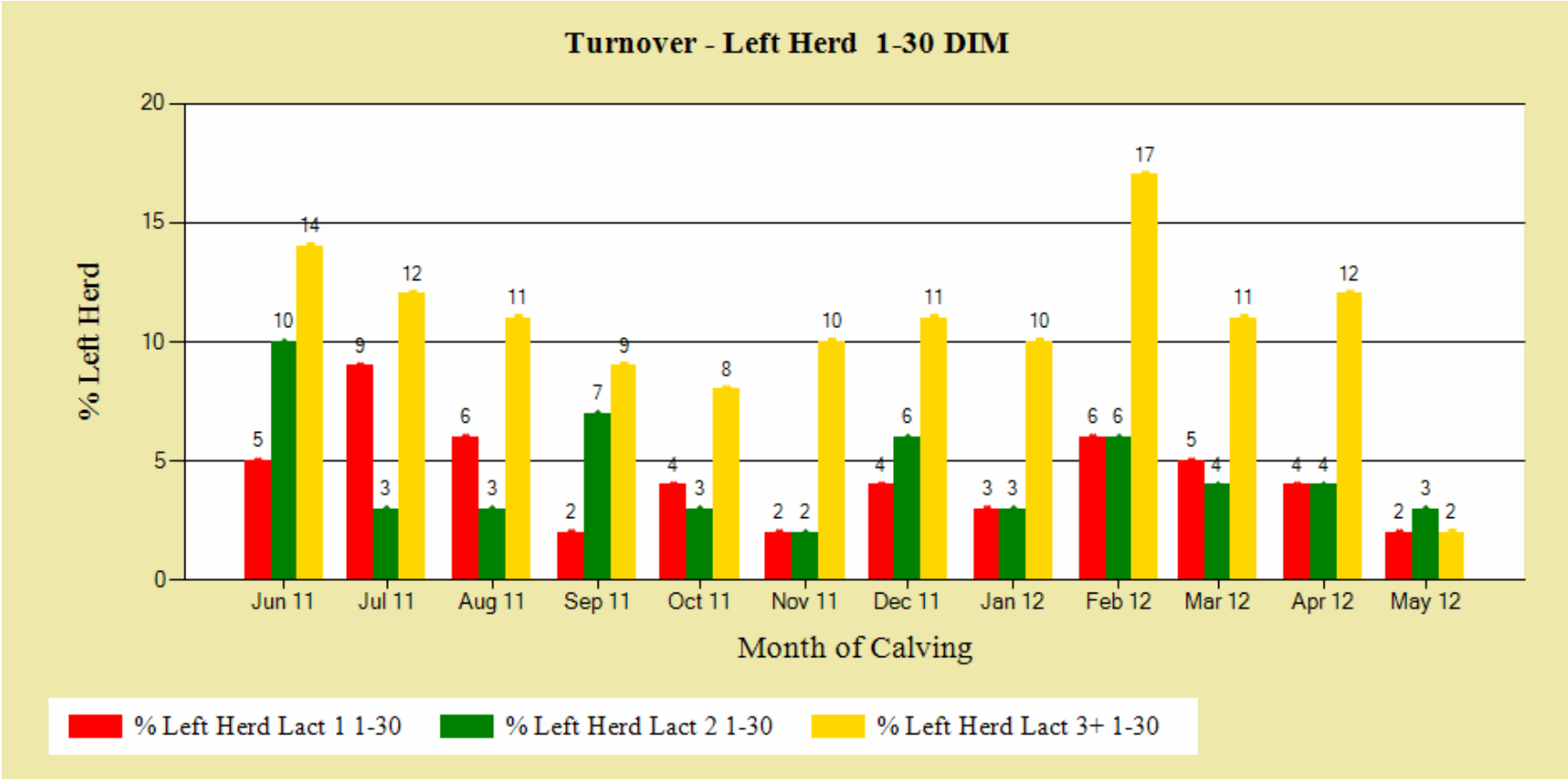
DHI-PROVO

Leaving the Herd: First 30 DIM



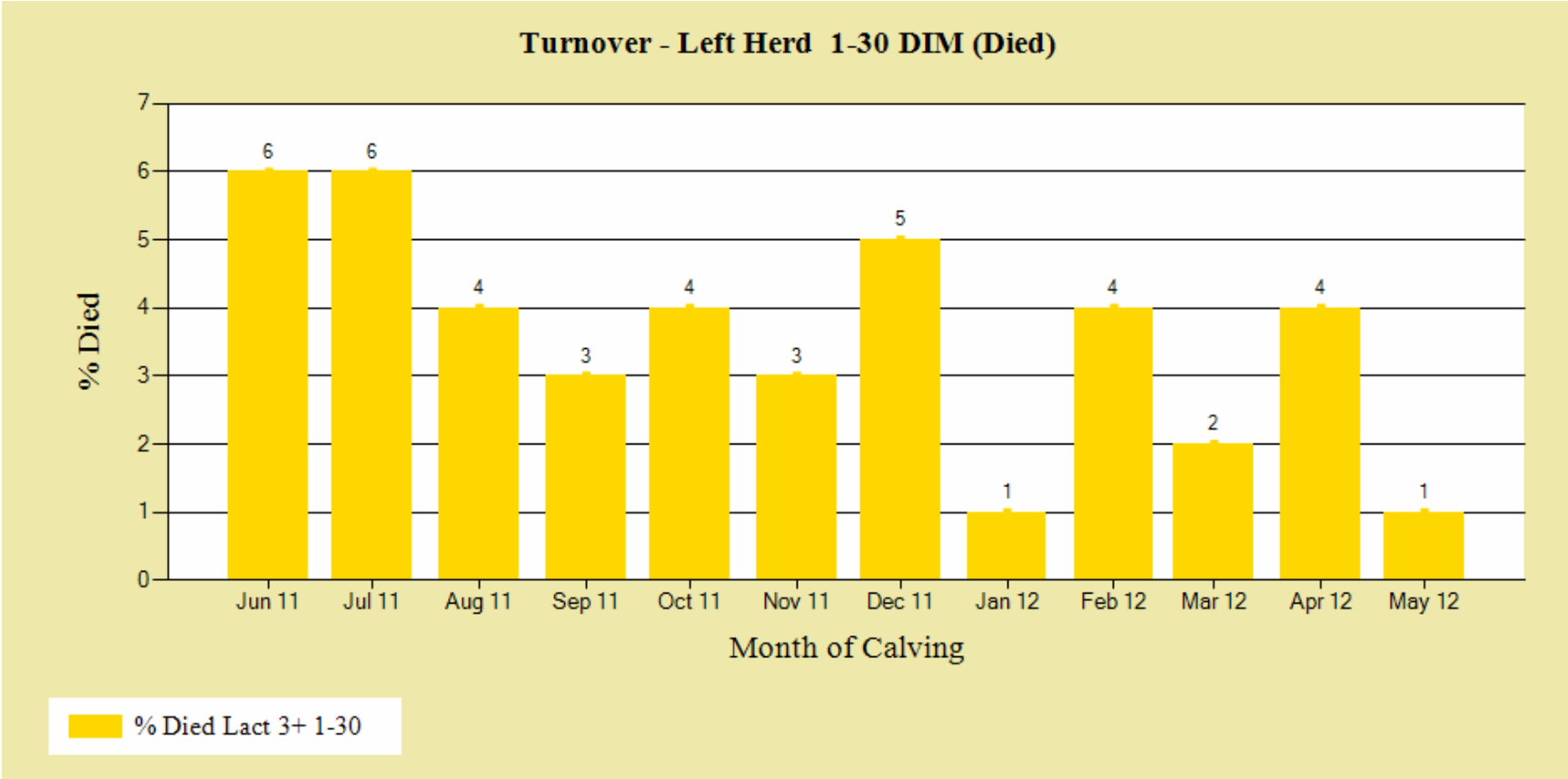
DHI-PROVO

Leaving the Herd by Lactation



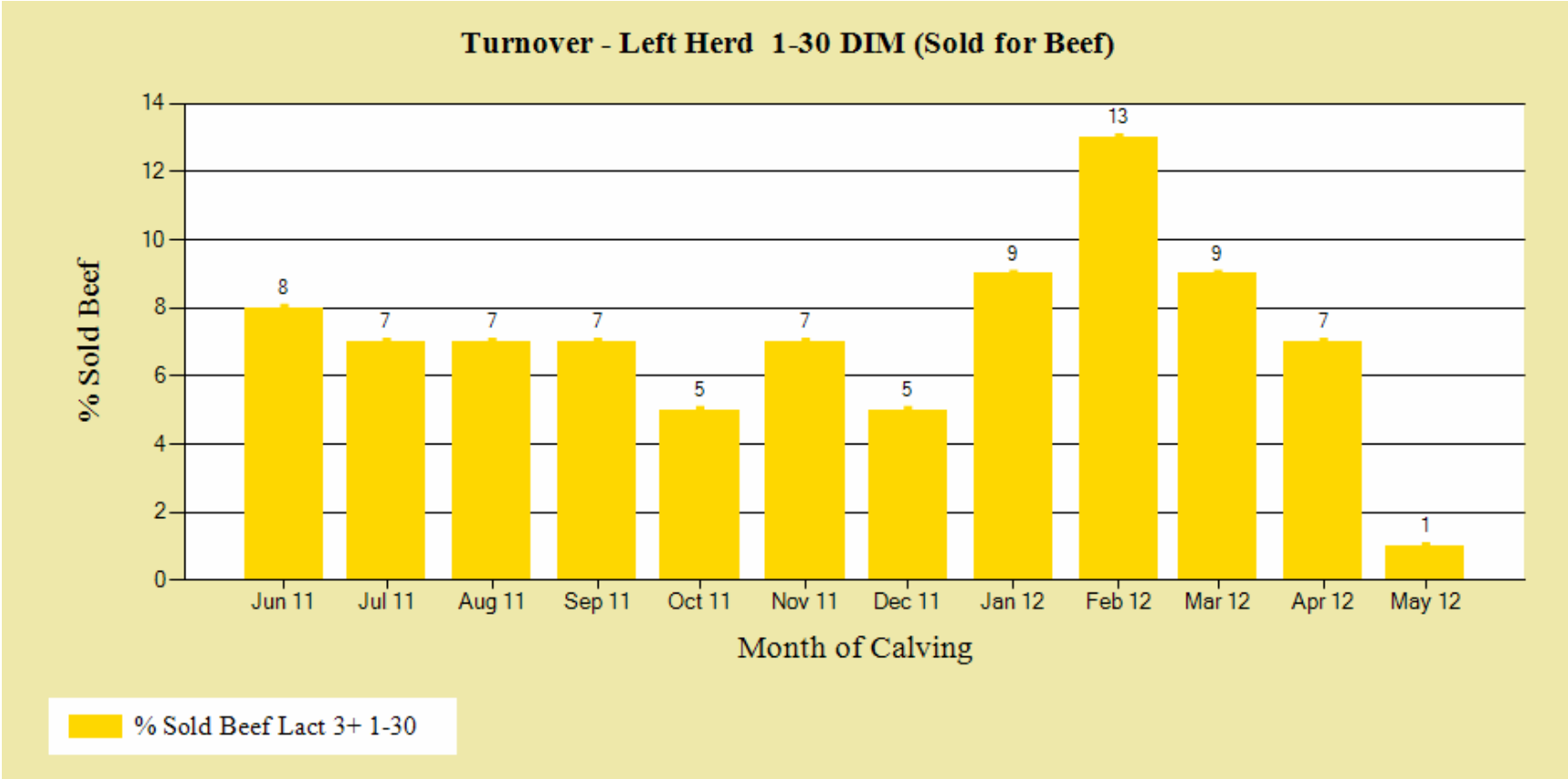
DHI-PROVO

Lactation 3+ Cows Died



DHI-PROVO

Lactation 3+ Cows Sold



DHI-PROVO

Other Cohort Groupings

- Health events during the transition period

DHI-PROVO

Displaced Abomasum

- Lower milk production (5,678 pounds)
- At $18.00/cwt. milk = $1,022

DIM	Data	DA 30DIM	Other	Totals
Lact. All				
Transition	# of Cows	10 (1%)	1234 (99%)	1244
	Days Since Fresh	108	173	141
	305 ME Milk	22,291	27,969	25,130
Lact. 1				
Transition	# of Cows	2 (0%)	432 (100%)	434
	Days Since Fresh	159	174	166
	305 ME Milk	19,900	26,296	23,098
Lact. 2				
Transition	# of Cows	1 (0%)	317 (100%)	318
	Days Since Fresh	284	182	233
	305 ME Milk	32,030	30,194	31,112
Lact. 3+				
Transition	# of Cows	7 (1%)	485 (99%)	492
	Days Since Fresh	69	167	118
	305 ME Milk	21,583	27,962	24,773

DHI-PROVO

Mastitis in the First 60 DIM

- Lower milk production (1,753 pounds)
- Lower reproduction performance (7%)

DIM	Data	MAST 60DIM	Other	Totals
Lact. All				
Transition	# of Cows	106 (9%)	1138 (91%)	1244
	Days Since Fresh	175	172	174
	305 ME Milk	26,320	28,073	27,197
1-30	# of Weights	82	920	1002
	% Preg in Lact.			
31-60	# of Weights	98	947	1045
	% Preg in Lact.	5	7	5.8
61-90	# of Weights	87	886	973
	% Preg in Lact.	15	24	19.3
91-120	# of Weights	68	757	825
	% Preg in Lact.	29	39	34.3
121-150	# of Weights	68	682	750
	% Preg in Lact.	46	53	49.8
151-180	# of Weights	52	580	632
	% Preg in Lact.	58	66	62.0
181-210	# of Weights	45	505	550

DHI-PROVO

Other Cohort Groupings

- Length of time in the close-up pen
- Month bred
- User-defined groups:
  - Research groups
- Heifers:
  - Month of birth
  - Month bred
  - Age at calving

DHI-PROVO

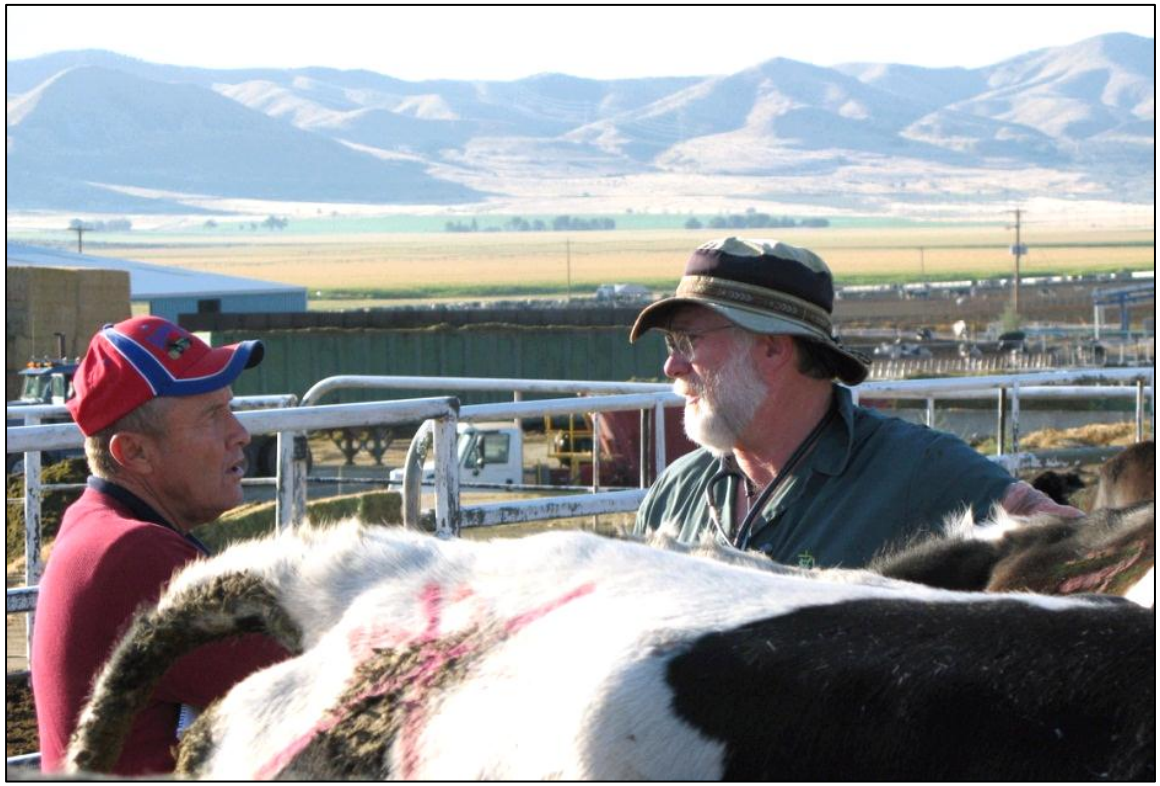
Age at First Calving

DIM	Data	22	23	24	25	26	27	28	Other	Totals
Lact. 1										
Transition	# of Cows	5 (1%)	150 (35%)	183 (42%)	53 (12%)	29 (7%)	10 (2%)	2 (0%)	2 (0%)	434
	% DOA's		12.0	7.1	15.1	13.8	10.0			11.6
	Days Since Fresh	250	195	163	158	164	150	166	77	165
	305 ME Milk	25,624	26,710	26,067	26,675	25,117	24,547	22,020	30,160	25,865
	2 Week Milk	39.3	57.4	57.8	66.3	61.5	62.7	38.1	74.7	57.2
	4 Week Milk	58.3	66.7	67.9	70.7	69.7	75.0	21.9	80.4	63.8
	8 Week Milk	72.9	73.5	76.5	76.3	70.9	84.2	53.9	95.6	75.5

DHI-PROVO

Using the Cohort Analysis Tools

"I am shocked with how well I can drive the herds."



Conclusion

- Cohort analyses of subgroups are powerful, analytical management tools
- You can “see” the relationships of herd management, feed management and weather with production
- Analyze the impact of health events
- Drill into the performance of subgroups
- More sensitive measurement tool
- Encourages more discussion and the asking of “why?”

DHI-PROVO