Interpretation of Reproductive Records
Part II

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Reproductive Efficiency and Management

- **Identify the critical weaknesses and prioritize them**
- **Use the knowledge to develop management practices and implement changes to achieve your goals**
- **Goals should be ----------**

Herd Summary Data

- **Provide a useful "shorthand" summary of reproductive performance.**
- **Indicate if there are potential problems**
- **It can serve as a tool for trouble shooting**
- ***All the records are rolling averages!***

DHI RECORD

- ✓**Reproductive Cull Rate**
- ✓**% Heat Detection**
- ✓**Average Days to First Breeding**
- ✓**First Service Conception Rate**
- ✓**Overall Conception rate**
- ✓**Breeding Per Conception**
- ✓**Days Open**
- ✓**Calving Interval**

Pregnancy Rate ?

EXAMPLE

Average days to 1st breeding = 70 days

Average days open = 154 days

Services per conception = 3

154 – 70 = 84 days

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80 days / 21 = comprises 4 cycles

If all heats had been detected
we should have had total of 5 services

That tells us only half of the services are detected

Herd Summary Data (Drawbacks)

1) ----------:

- **Measured change does not appear in the average right away**

Example: delays in breeding heifers will not affect the average age at first calving until heifers begin freshening 9 mo. Later

2) ----------:

- **Problems with avg. of records spanning a long period of time**

Example: Rolling herd average calculates last 12 mo. , but makes it a poor indicator of current milk production

Herd Summary Data (Drawbacks)

3) ----------:

- **Average favors a particular out come**

Example: services per conception take to account services for pregnant animals and not the services of open cows

4) ----------:

- **Is the calculated average based on normal distribution or skewed distribution?**

Example: Average days open

Do not breed (DNB)

$$\frac{\text{(Services per conception X 21)}}{\text{(Days Open – VWP) + 11}} \text{ X100} = \text{\% ----------}$$

✓**All heats resulted in a service**

✓**All services occurred on a heat**

% Heat Detected
Post- 1st service

$$\frac{\text{(Services per conception X 21)}}{\text{(Days Open – day to first service)}} \text{X100} = \text{\% Heat Detected}$$

Snap Shot

Breed 15 cow

Preg check = 6 cows Pregnant

6 ÷ 15 = 40% Conception

Services / Conception => 15 ÷ 6 = 2.5

How to Calculate Conception percentage

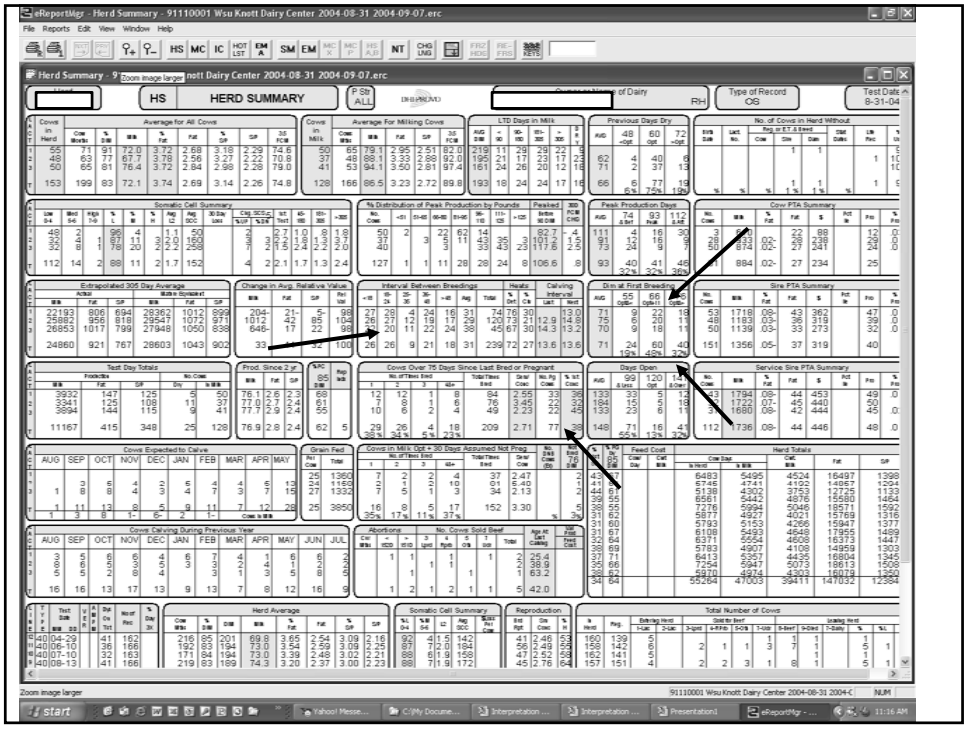
Conception is directly related to the number of services per conception (also called services per pregnancy)

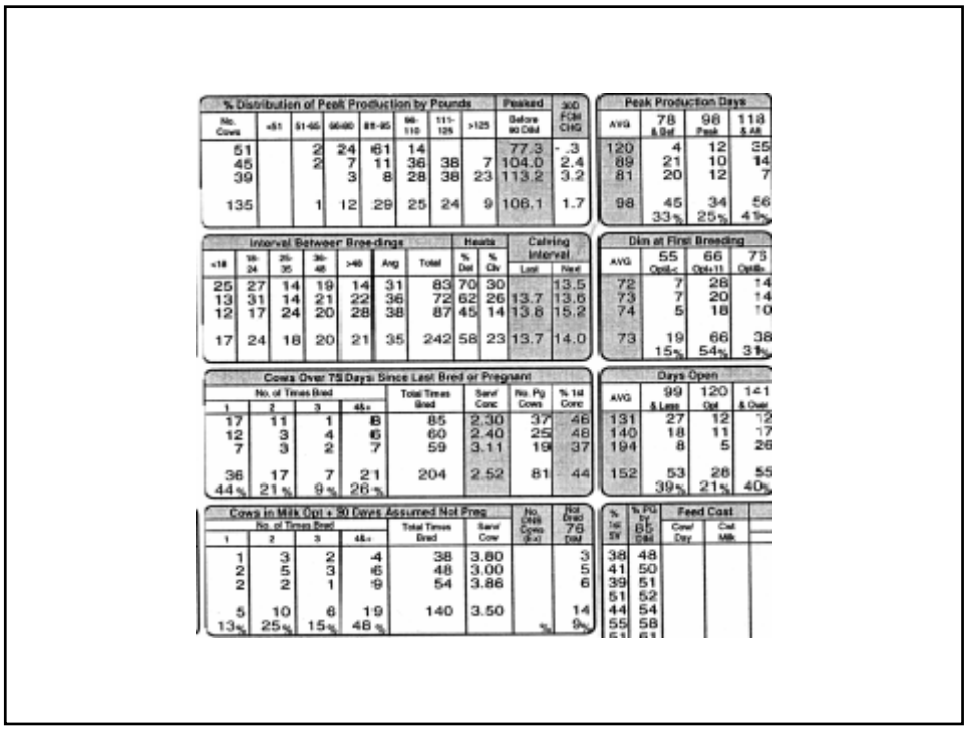
Conception % = # cow inseminated÷ # cows pregnant

Estim. Concep. = 100 ÷ services per conception X 100

How to Calculate Pregnancy Rate (Independent from Time Unit)

---------- = Heat detection % X Conception %


eReportMgr - Herd Summary - 91110001 Wsu Knott Dairy Center 2004-08-31 2004-09-07.erc
HS
HERD SUMMARY
Type of Record
OS
Test Date
8-31-04
Average for All Cows
Average For Milking Cows
LTD Days In Milk
Previous Days Dry
No. of Cows In Herd Without
Somatic Cell Summary
% Distribution of Peak Production by Pounds
Peak Production Days
Cow PTA Summary
Extrapolated 305 Day Average
Change in Avg. Relative Value
Interval Between Breedings
Dim at First Breeding
Sire PTA Summary
Test Day Totals
Prod. Since 2 yr
Cows Over 75 Days Since Last Bred or Pregnant
Days Open
Service Sire PTA Summary
Cows Expected to Calve
Cows in Milk Opt + 30 Days Assumed Not Preg
Feed Cost
Herd Totals
Cows Calving During Previous Year
Abortions
No. Cows Sold Beef
Herd Average
Somatic Cell Summary
Reproduction
Total Number of Cows


% Distribution of Peak Production by Pounds
Peak Production Days
Interval Between Breedings
Dim at First Breeding
Cows Over 75 Days Since Last Bred or Pregnant
Days Open
Cows in Milk Opt + 30 Days Assumed Not Preg
Feed Cost

Pregnancy Rate
(Based on Time Unit)

More realistic and measurable

Pregnancy rate may be defined as the percentage of cows eligible to become pregnant <u>within a given interval</u> (21 days, the typical length of an estrous cycle, or 7 days, the length of a week), that actually do become pregnant.

e Edit Search Help

Dairy Comp 305 ---------- Page {$PAGE}
Command : BREDSUM\E
Expanded :

C:COWFILE1.DAT ---------- 2/28/02

Date	Ht Elig	Heat	Pct	Pg Elig	Preg	Pct	25 %	50 %	75 %	100 %
/15/01	306	177	58	295	53	18	P	H		
/08/01	277	188	68	264	41	16	P		H	
/29/01	306	189	62	303	54	18	P	H		
/19/01	318	212	67	314	68	22	P		H	
/10/01	323	205	63	318	73	23	P	H		
/31/01	329	189	57	323	62	19	P	H		
/21/01	326	217	67	318	48	15	P		H	
/12/01	337	231	69	327	63	19	P		H	
/02/01	322	208	65	311	53	17	P	H		
/23/01	333	207	62	330	70	21	P	H		
/13/01	349	229	66	333	78	23	P	H		
/04/01	302	169	56	296	58	20	P	H		
/25/01	309	195	63	301	59	20	P	H		
/15/01	305	202	66	293	61	21	P		H	
/06/01	305	191	63	294	48	16	P	H		
/27/01	323	212	66	286	51	18	P	H		
/17/02	295	189	64	0	0	0	Undet Preg Stat			
/07/02	230	186	81	0	0	0	Undet Preg Stat			
Total	5070	3221	64	4906	940	19	P	H		

Heat detection rate = 3221 ÷ ----------

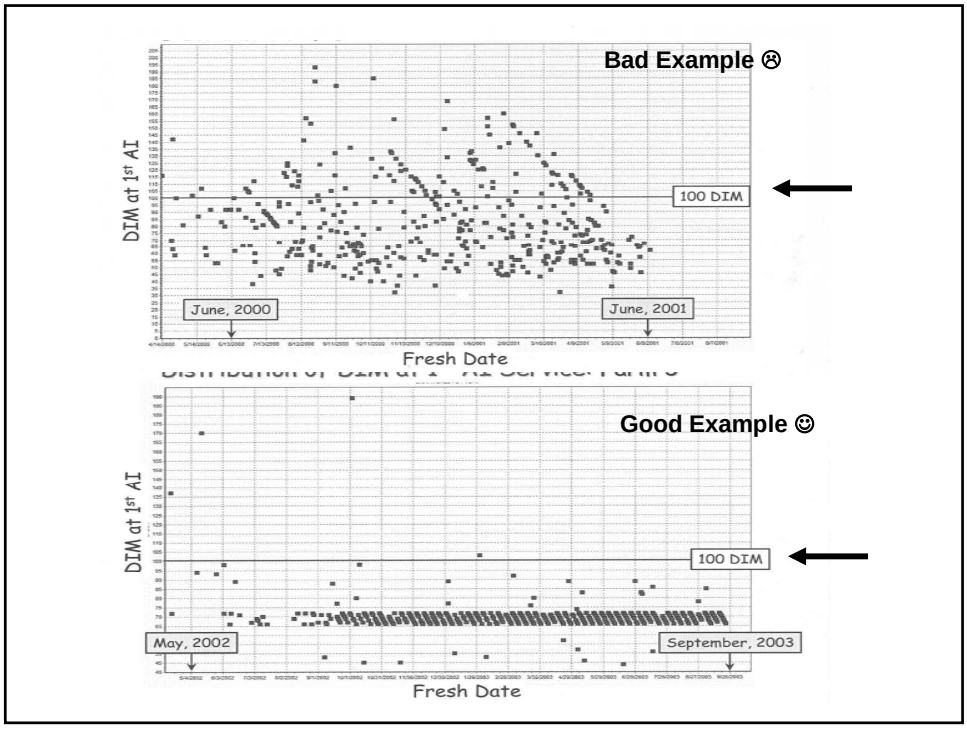
Preg Rate =940 ÷ ----------

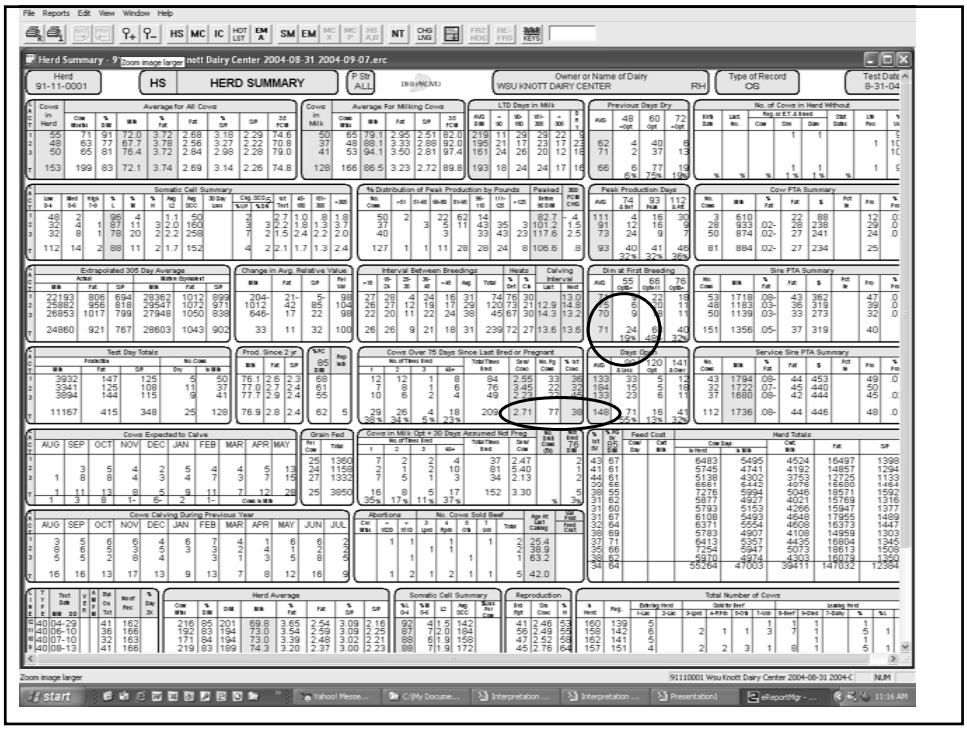
BREDSUM FOR LACT>0

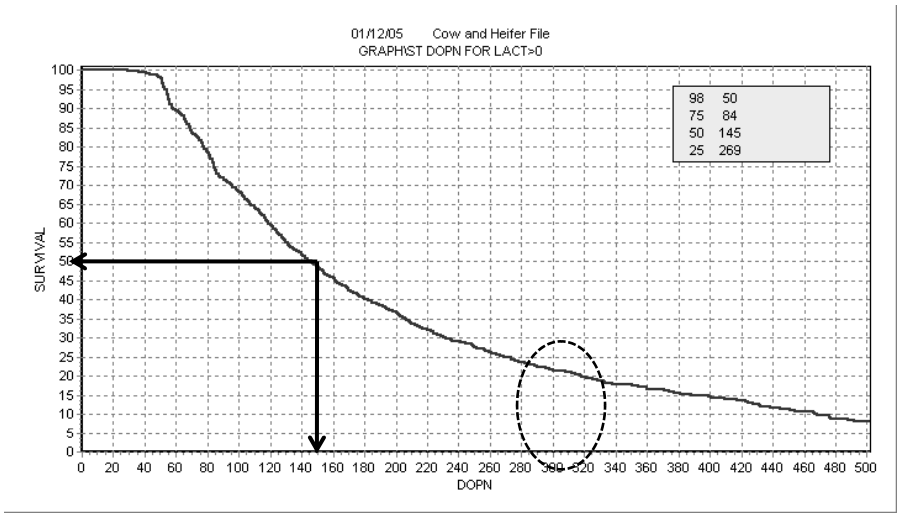
Date	Ht Elig	Heat	Pct	Pg Elig	Preg	Pct	25 %	50 %	75 %	100 %
12/15/98	54	22	40	53	3	5	P	H		
1/ 5/99	68	42	61	64	8	12	P		H	
1/26/99	73	26	35	71	2	2		H		
2/16/99	88	55	62	84	10	11	P		H	
3/ 9/99	96	52	54	95	15	15	P		H	
3/30/99	101	55	54	100	13	13	P		H	
4/20/99	103	60	58	101	18	17	P		H	
5/11/99	100	64	64	96	23	23	P		H	
6/ 1/99	85	33	38	83	6	7	P	H		
6/22/99	85	42	49	85	9	10	P	H		
7/13/99	91	40	43	90	6	6	P	H		
8/ 3/99	102	61	59	99	19	19	P		H	
8/24/99	103	56	54	100	13	13	P		H	
9/14/99	110	74	67	106	33	31		P	H	
10/ 5/99	101	67	66	97	24	24		P	H	
10/26/99	98	62	63	76	12	15	P		H	
11/16/99	85	50	58	0	0	0	Unknown Preg status			
12/ 7/99	65	57	87	0	0	0	Unknown Preg status			
Total	1458	811	55	1400	214	15	P		H	

Days to First Service
(Days in milk at first service)

- **Excellent indicator of management of the herd through the dry period, calving, and early lactation.**
- **Directly related to pre-service heat detection efficiency**
- **----------**


Bad Example ☹
DIM at 1st AI
100 DIM
June, 2000
June, 2001
Fresh Date
Good Example ☺
DIM at 1st AI
100 DIM
May, 2002
September, 2003
Fresh Date


HERD SUMMARY



Some additional Goals

- **Present of cow pregnant at any given time**

  – **---------- to ----------***

- **Present of cows open by 150 DIM**

  – **---------- %**

* Unless calving is seasonal, like in New Zealand

In evaluating the success (or failure) of a new reproductive management program recognize that:

I. **Traditional parameters such as average days open and calving interval while they are useful, they are not very sensitive to management changes.**

II. **Pregnancy rate base on time interval (e.g. 21-day) is sensitive to change.**

III. **Pregnancy rate allows for the evaluation of recent events or management changes on reproductive efficiency.**

IV. **Achievable pregnancy rate should be about 25% and higher.**