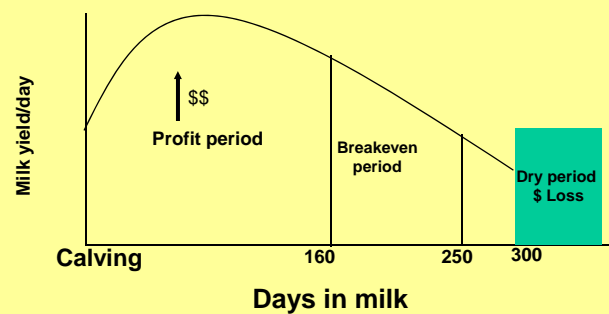


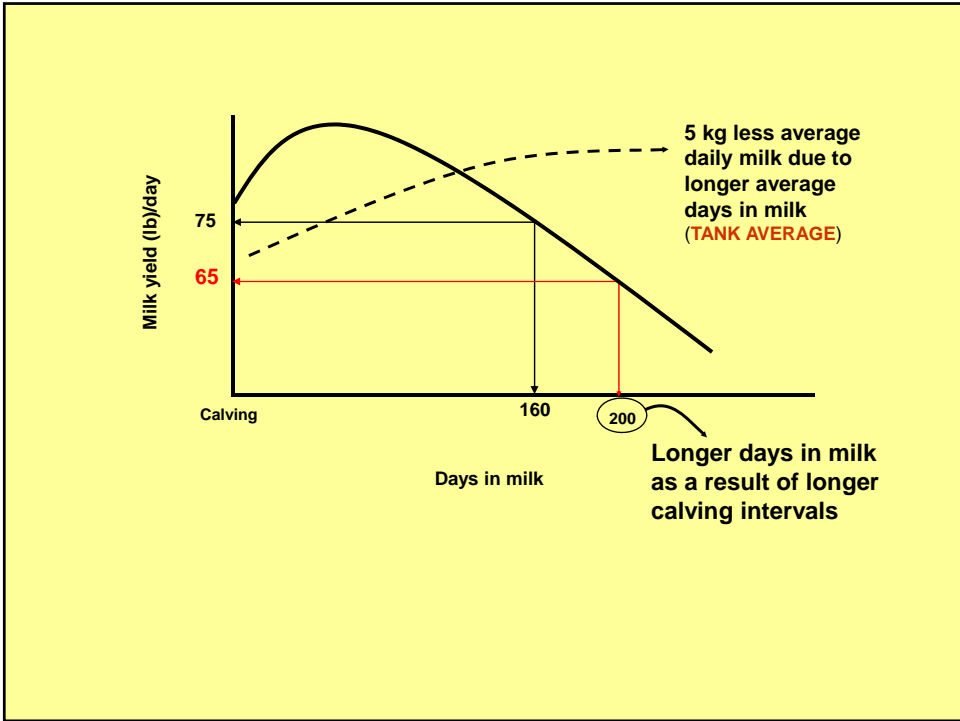
Reproductive Efficiency and Management in Cattle

Part #1

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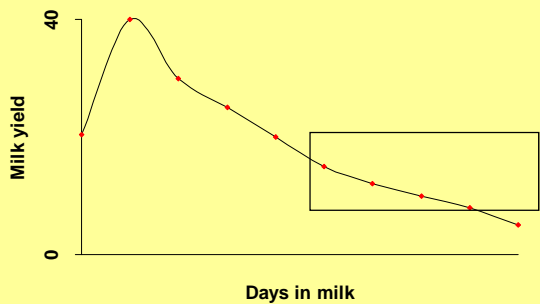
How Does Poor Reproductive Efficiency Affect Dairy Farm Operating Income?

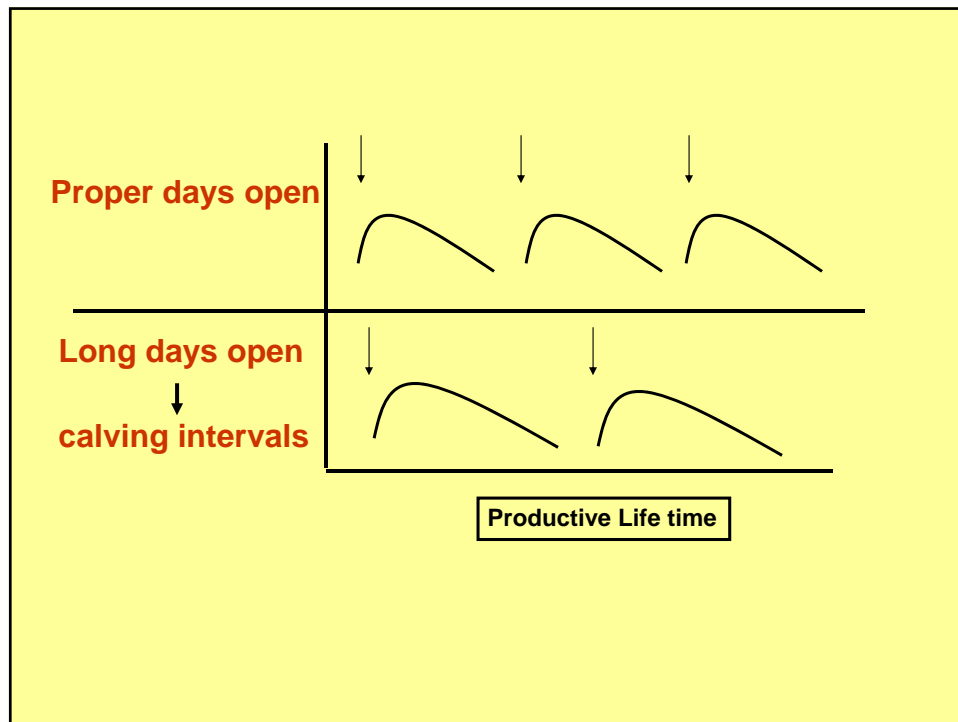




How Does Poor Reproductive Efficiency Affect Dairy Farm Operating Income?

- Long days open and and long calving intervals:
 - Less milk is shipped and thus, cash flow is reduced





Cost of Poor Reproductive Management

- Every undetected cost approximately \$60
- Every day a cow remains open past 110 DIM (postpartum):
Cost = ~ \$2-3\$ per day per cow

Table 2. Change in daily milk yield, days in milk, 305-day ME milk, and reproductive performance for Holstein herds – stratified by calving interval¹

Item	Calving Interval (months)					
	<13	13 to 13.9	14 to 14.9	15 to 15.9	16 to 16.9	>16.9
Number of herds	129	1,416	1,856	919	290	161
Average herd size	83	159	160	157	125	165
Daily milk yield (lbs.)	66.5	67.1	64.2	60.3	57.3	53.5
Days in milk	156	178	197	216	236	262
Voluntary waiting period (days)	56	57	56	57	56	55
Days to 1st service	74	82	93	105	120	140
Conception rate 1st service	47	41	40	40	42	47
% heat observed	53	50	44	38	33	26
Projected 305-day ME milk (lbs.)	22,751	23,652	23,264	22,404	21,592	20,791

¹ DairyMetrics reports, processed by Dairy Records Management Systems, Raleigh, N.C., were generated on Sept. 11, 2002, using current DHI information for Virginia Holstein herds that have a twice-daily milking schedule and 25% or less of the services were to non-AI sires.

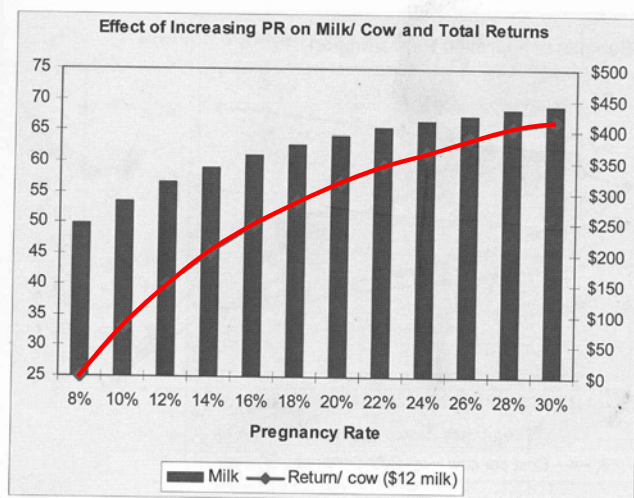


Figure 2. Predicted effect of increasing pregnancy rate on milk/ cow/ day and net marginal returns.

Every 1% increase in PR = \$25

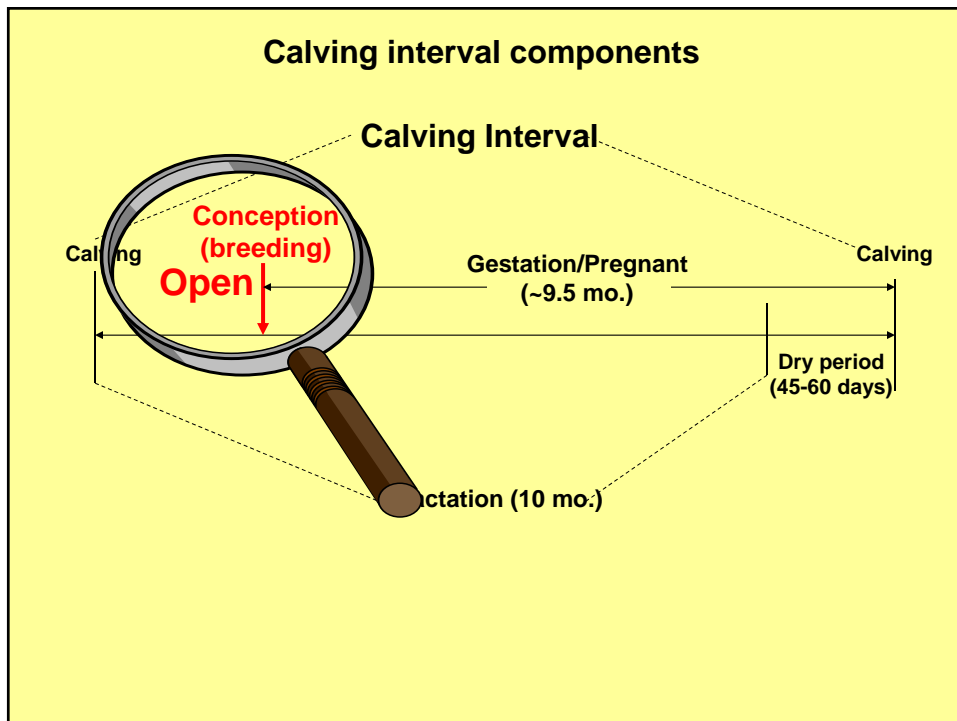
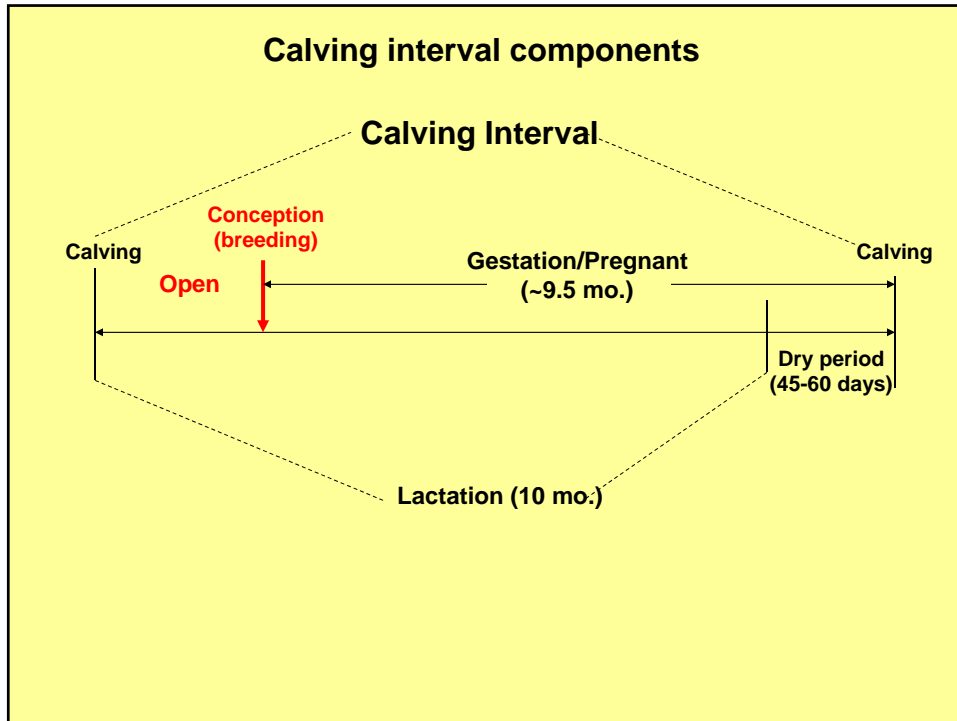
Dr. Overton, Univ. of Georgia

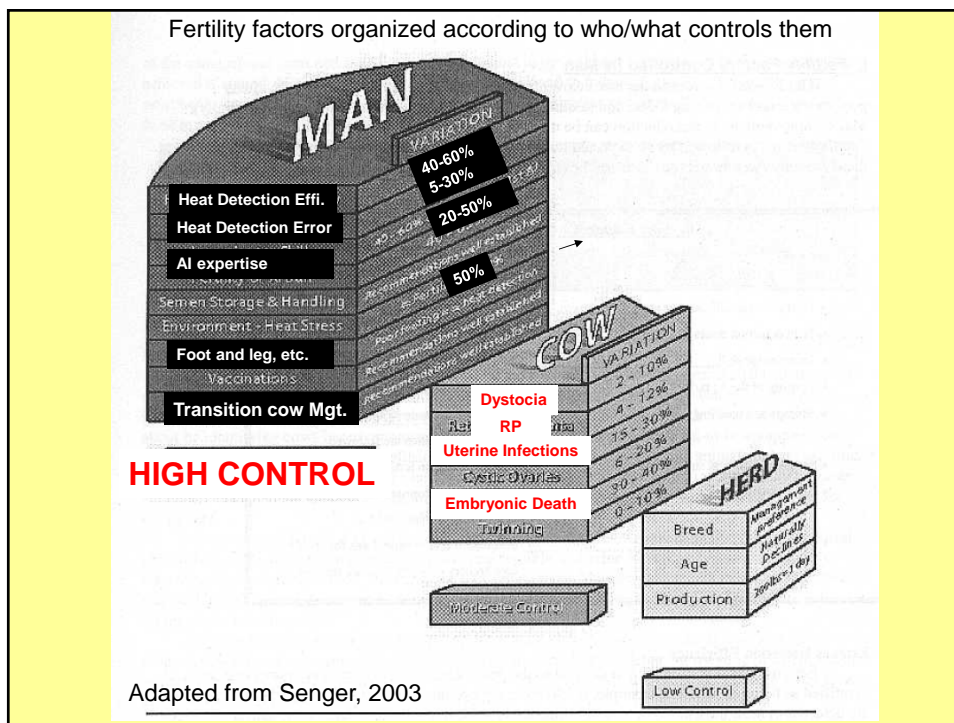
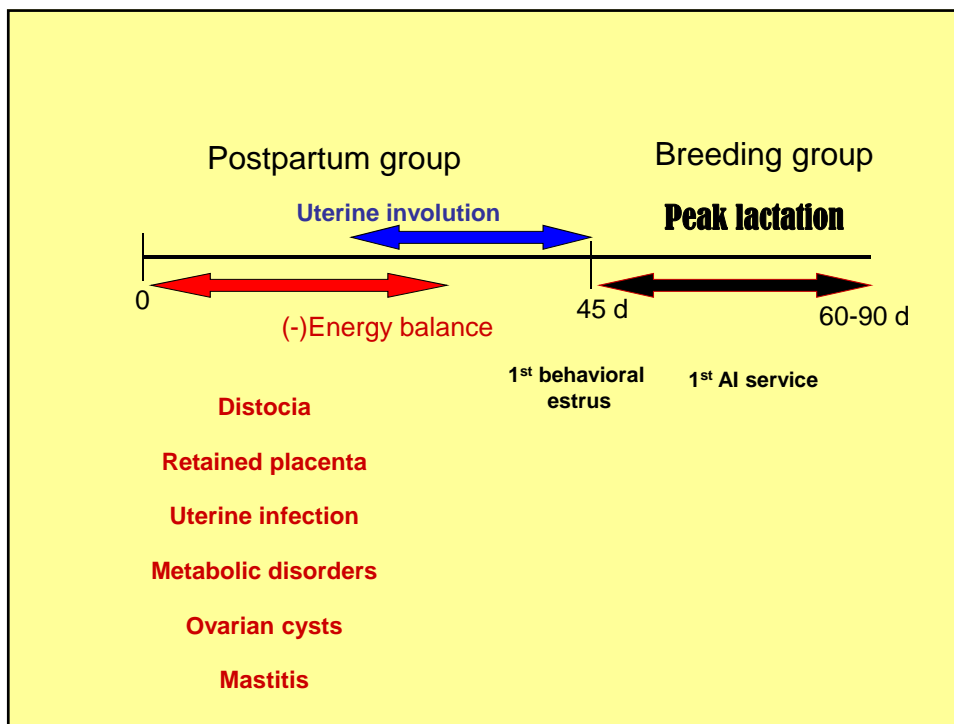
Reproductive Efficiency and Management in Cattle

- **Understand anatomy and physiology of reproduction**
- **Know the hormones of reproduction, and understand their sources , targets, and their functions**
- **Know the reproductive cycle (estrous cycle, gestation, anestrous period, etc.) of the cow**
- **comprehend what is normal and abnormal and have complete and accurate records**

Reproductive Efficiency and Management

- **Recognize the parameter by which reproductive efficiency can be measured and establish goals**
- **Identify the critical weaknesses and prioritize them**
- **Use the knowledge to develop management practices and implement changes to achieve your goals**
- **Goals should be measurable and attainable**





Grouping cows for Efficient Management

- **GROUP I** : Early postpartum cows (0-45 days postpartum)
 - 0-10 days postpartum
- **GROUP II** : Postpartum breeding (45-120 days postpartum)
 - Reproductive management
 - Intense heat check
 - Implementing systematic **breeding program**
 - Identify **problem cows** (reproductive health)
 - Pregnancy checks
 - Nutritional management (Peak lactation)
- **GROUP III**: Pregnant lactating cow (> 120 days postpartum)
- **GROUP IV**: Dry cows

Reproductive Parameters

Pregnancy Rate

Number of cows diagnosed pregnant divided by total number of breedable cows in the herd over defined period of time (21 days)

Days Open

The number of days between the most recent calving and conception

Average Days to First Breeding

The number of days from calving to first insemination

% Heat Detection

Percent of eligible estrus(heat) that has been detected

Reproductive Parameters

First Service Conception Rate

Overall Conception rate

The number of cows diagnosed pregnant divided by the total number of cows inseminated.

Breeding Per Conception

How many services/breedings does it take to get the cow pregnant

Calving Interval

The average number of months between the latest two calving dates for individual cows or a herd

Reproductive Cull Rate

Reproductive Performance Goals

	Ideal Goals	Realistic goals
Reproductive Cull Rate	< 8 %	10%
% Heat Detection	> 70	60%
Average Days to First Breeding	70 – 75 d	75 d
First Service Conception Rate	60%	50%
Overall Conception rate	50-55%	45%
Breeding Per Conception	< 2	2.3
Days Open	110	125 d
Calving Interval	13 months	13.5 Mo.
Pregnancy rate	> 25%	25

Pregnancy rate = Heat detection rate X Conception rate

Dairy Comp 305 : Cow and Heifer File

File Reports Health Enter1 Enter2 Testday Utils DailyM Summary Sires Help

Command ?

Reports

Esc

- Command : BREDSUM

Date	Br Elig	Bred	Pct	Pg Elig	Preg	Pct	Aborts
2/11/04	217	121	56	217	3	1	13
3/03/04	263	141	54	263	13	5	14
3/24/04	318	208	65	317	67	21	21
4/14/04	307	181	59	307	61	20	15
5/05/04	310	181	58	310	61	20	12
5/26/04	336	222	66	336	86	26	16
6/16/04	331	199	60	331	76	23	16
7/07/04	295	182	62	295	53	18	16
7/28/04	290	179	62	290	48	17	5
8/18/04	346	233	67	346	65	19	11
9/08/04	378	262	69	377	71	19	15
9/29/04	376	258	69	375	94	25	10
10/20/04	341	248	73	339	84	25	9
11/10/04	338	237	70	338	82	24	3
12/01/04	359	237	66	0	0	0	0 ????
12/22/04	313	227	73	0	0	0	0 ????
Total	4762	3010	63	4757	874	18	200

Entries

System Main Commands CowCard Grid Report Graph Activity

(1/12/05) Prt OFF Task Stopped D:\COWFILE1\VEGA.DAT Cow and Heifer File

Start Removable... Removable... Dairy Com... Microsoft P... 10:31 AM

Maintaining Pregnancy rate (Practical approach)

1000 cows

We need 1000 pregnancy

Calving Interval Goal = 13 month

1000 / 13 or calving interval = ~ 77 preg./mo

1000 / 56 weeks = ~ 18 pregnant / week

Take Home Message

- **Reproductive problems are seldom due to a single cause**
- **Pay extra attention to the cows during the early postpartum period**
- **Overall health is important, sick cows don't do well reproductively**

Take Home Message

- **The effects of disorders on reproductive performance, culling, and profit are more severe in older cows**
- **Cows with mastitis and those that have calving difficulties and treated for retained placenta are at risk to have other problems (ovarian cysts, uterine infections, etc.) and require more attention**
- **Good sanitation and vaccination program can prevent many reproductive disorders**