



DAIRY CATTLE REPRODUCTION COUNCIL

## Putting a Price on Reproductive Losses

It's hard to put a price on the losses of an inefficient reproductive program. Unlike a drop in milk production, the paycheck will not fluctuate weekly. And unlike mastitis issues, treatment bills don't pile up when problems arise. Even when we don't recognize reproductive losses as routinely as other sectors of the dairy, income can be lost if your reproductive program is not working optimally. According to University of Nebraska extension specialists Jeffrey Keown and Paul Kononoff,<sup>1</sup> four areas are the basis for the majority of reproductive losses:

1. Calving intervals that are too long or too short
2. Dry periods that are too long or too short
3. A.I. performance, particularly high services per conception
4. Heifers too old at freshening

The good news is that the four major reproductive areas require little if any additional capital inputs, but improvements can substantially increase revenue. This article will investigate areas that may be a snag in your operation, discuss ways to properly manage each area, and help put a dollar value to your current program.

### Record Keeping is the Root of Repro Success

One of the most important tools needed to improve herd reproduction is accurate and up-to-date herd records. There are multiple systems that can be used, varying in complexity. Whether it be a software program, breeding wheel or a customized program set up with your veterinarian, records on individual cows are essential to track and improve herd reproduction.

Four dates must be tracked closely to ensure timely breeding, pregnancy diagnosis and dry off, including:

- **Freshening.** The entire reproductive system is triggered by the freshening day as it is the start of the next reproductive cycle. If you don't see a cow in heat within the first 50 days after freshening, a veterinarian should examine her to ensure proper cycling or to identify an infection or reproductive disorder. An excellent practice is to complete routine vet checks on each cow soon after freshening to ensure reproductive health.
- **Heats.** Report all heat dates so cycle length and timing of the next heat can be estimated. This will also help identify noncyclical cows. It's important to note that observation is the key to effective heat detection. To ensure every heat is detected, use heat detection aids to augment your dairy's management practices.
- **Breeding.** Recording accurate breeding dates allows for timely pregnancy checks after breeding. That way if cows are called open they can promptly resume reproductive protocols to ensure timely calving.
- **Conception.** Recording conception dates allows for appropriate dry off. This is especially important in herds utilizing a shortened dry period. If cows are not dried off appropriately, they can calve shortly after dry off, reducing the recovery and restoration time before the next lactation.



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**Measuring Your Program Against Industry Goals**

The dairy industry has established several reproductive goals to ensure your cows are getting bred, drying off and freshening in a timely manner. The table lists these goals, which can be a good benchmarking tool for your operation. Take some time to compare the goals with your current reproductive program, identifying areas needing improvement to ensure optimal herd reproduction.

Goals to Evaluate Your Reproductive Program	
Measurement	Goal
Calving interval	365 – 380 days
Avg. days to first observed heat	<40 days
Percent of cows observed in heat by 60 DIM	>90%
Avg. days open to first breeding	50 – 60 days
Avg. days open to conception	85 – 100 days
Services per conception	1.5 – 1.7
Heifer first service conception rate	65 – 70%
Lactating cow conception rate	55 – 60%
Percent breeding intervals between 18 – 24 days	>85%
Percent cows open >120 days	<10%
Dry period length	45 – 60 days
Avg. age at 1 <sup>st</sup> freshening	24 months
Avg. age at 1 <sup>st</sup> breeding	15 months
Percent cows pregnant ≤ 3 A.I. services	90%
Percent cows pregnant on exam	80 – 85%
Abortion rate	<5%
Cull rate for infertility	<10%

**Putting a Price on Your Goals**

There’s no better way to illustrate the value of reproductive health than to identify potential economic losses. While you won’t receive monthly bills from poor reproduction, you will see the results in longer days in milk, fewer heifers joining the milking string and ever-rising reproductive costs.

The table on the next page puts a direct price on each of the four areas on the dairy—calving interval, dry period, services per conception and average age at freshening—when reproductive numbers do not meet industry-recognized goals.



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Potential Financial Gains from Improved Reproduction	
Measurement	Financial Losses
Calving Interval	>365 days = \$1/day >395 days = \$30 + \$3/day >395
Dry Period	\$3/day for >60 days \$3/day for <45 days
Services/Conception	\$1 for each 0.1 services/conception >1.5
Average Age at Freshening	\$30/month for each month >24

Matching Losses to Current Herd Repro

To better understand the financial losses of an inefficient reproductive program, two scenarios have been created to show a direct comparison of financial losses. The chart below of two herd's statistics shows that herd A is outperforming herd B in all areas.

	Dairy A	Dairy B
Number of Cows	2,500	2,500
Calving Interval (average days)	360	398
Dry Period (average days)	55	77
Services/Conception	1.7	2.2
Age at Freshening (mos.)	23	26

In the next chart, we delve a little deeper into the financial losses on a per cow basis, then multiply it by 2,500 to get a total reproductive financial loss for the entire milking herd:

Measurement	Cost to Dairy B
Calving Interval (average days)	398 days = \$30 + (\$3 x 3 days) = \$39
Dry Period (average days)	66 days = \$3 x 6 days = \$18
Services/Conception	2.2 = \$1 x 7 = \$7
Age at Freshening (mos.)	26 = 30 x 2 = \$60
Reproductive Losses per Cow	\$124/cow/year
<b>Reproductive Losses Annually</b>	<b>\$310,000/dairy/year</b>

Even small deviations from the set goals can have a dramatic impact on dairy profitability. Many of these improvements can be made without large capital investments, but the additional attention to detail can lead to vast improvements in profitability.

In tough economic climates, making even the slightest improvements in your reproductive numbers can mean more money in your pocket. While you may never see a direct check or bill in your mailbox for reproduction, the benefits of improved reproduction can mean more heifers, more milk and healthier cows ready to maintain herd profitability.

1 Keown JE, Kononoff PJ. "How to Estimate a Dairy Herd's Reproductive Losses." NebGuide. 2006.