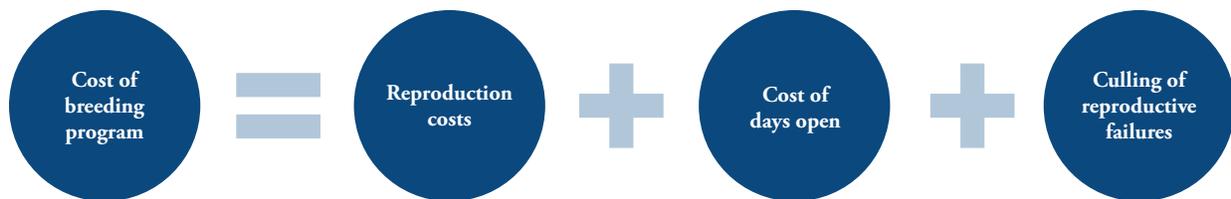


The Dollar Signs Behind Reproduction

While many questions surround reproductive decision-making, no one question is asked more than, “What will this cost me?” As producers make decisions related to reproductive technologies, the cost and potential financial benefits help drive and dictate their implementation. In this article we will highlight the financial implications related to reproduction and the importance of maximizing reproductive efficiency for the greatest profit potential.

Defining Reproductive Cost

The hard costs of reproduction are easy to measure. While the return on some of these expenses is not seen for months or years they can be tracked and recorded, including semen, labor, synchronization protocol expenses, pregnancy examinations, and facilities for sorting and handling animals. Beyond hard costs, expenses involved with reproduction are often related to lost profit potential, as the equation below outlines:



Within these three expense categories, poor reproductive performance will ultimately reduce herd profitability in several ways:

- **Reduced lifetime milk production.** When calving intervals increase, the result is more milk per lactation but less milk per day of life. These cows spend more days in late lactation when milk production levels are lowest.
- **Fewer replacements.** Longer calving intervals mean fewer calves are born each year, resulting in fewer replacement heifers or extra heifers to sell. Fewer replacements also reduce voluntary culling rates, slowing herd genetic progress.
- **Increased reproductive culls.** When more animals leave the herd for reproductive failure, this reduces the number of low producers that can be culled. This also keeps lower genetic potential animals in the herd for longer periods of time.
- **Higher reproductive costs.** Low conception rates mean more services per pregnancy, resulting in higher semen costs to obtain each pregnancy.
- **Greater vet bills.** Low reproductive efficiency often is associated with higher veterinary bills, as examinations and treatments increase in an attempt to get cows to conceive.
- **Higher incidence of overconditioned cows.** Cows that remain in the milking herd for long periods of time without getting pregnant and at low production often become overconditioned. Heavy cows have more health and reproductive problems during the subsequent lactation.



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Determining the Value of Reproduction

The benefits from improving reproductive efficiency are not as easy to measure as the defined costs of poor reproductive function. Many factors will impact the value of each pregnancy, and these factors can change over time or from one animal to the next. The main factors impacting the value of a pregnancy for an individual cow include:¹

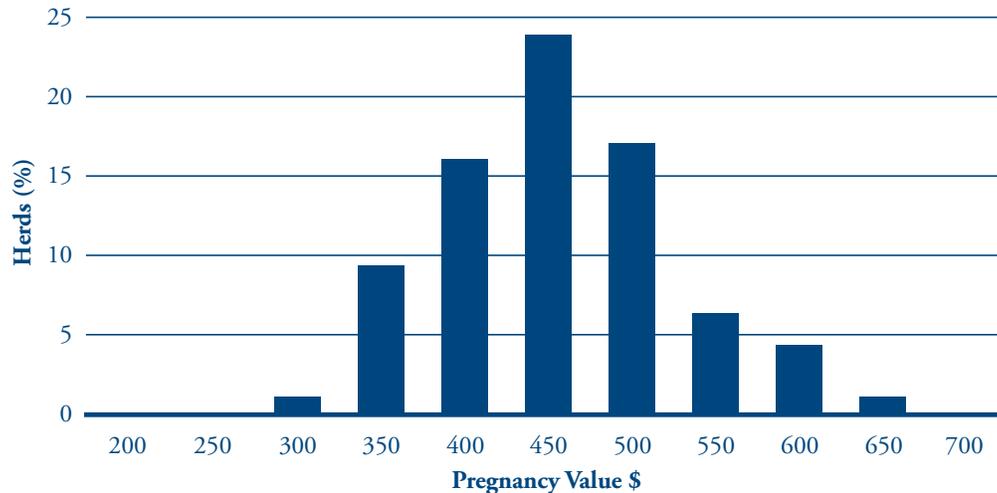
- **Future expected production potential.** The production potential of the cow you are trying to get bred will have a direct impact on the value of the pregnancy. If, for example, two open cows were the same age, in the same stage of lactation and in the same health, more effort would be spent trying to get the cow bred that had higher future production potential. Under most circumstances this animal's pregnancy will have more value because of the revenue generated from higher milk production.
- **Age of the animal.** A young cow will be expected to survive in the herd longer. Even though her lactation production might be less, she also has more subsequent lactations ahead. Older animals are more prone to disease and more likely to be culled, so achieving pregnancy in the younger animal is most important for long-term financial benefits.
- **Days in milk.** As milk production wanes in late lactation, open cows have less value than identical animals earlier in lactation due to lower income potential.
- **Stage of pregnancy.** The value of a pregnancy increases the closer an animal is to having a calf. A cow late in gestation is closer to the beginning of a new lactation, and thus the stage of life where she is generating profits.
- **Incidence of disease.** Animals that experience more disease not only increase herd costs, but often produce lower amounts of milk during the lactation. Because disease directly impacts production, the difference in the value of the pregnancy is reflected in production potential.
- **Milk price.** When milk prices are higher, it takes less production difference to justify replacement animals.
- **Value of culled animals and cost of replacements.** When a cow is replaced in the herd, there is a cash cost involved. The cost is the difference between the cash received for the culled cow and the cash necessary to bring a replacement into the milking herd.

To most effectively show just how valuable a pregnancy can be to a dairy, leading reproductive researchers have simulated the pregnancy value equation using Dairy Comp 305.[®] Using data from 77 California dairy operations, the group found that the value of a pregnancy ranges from \$300 to \$650:¹ The chart on the next page further details their findings.



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Average pregnancy value among herds
77 California dairy herds assessed in January 2000



From the Calculations the Group Learned:

- Pregnancies are worth less on farms with better reproduction because more pregnancies happen each year. For herds with poor reproduction, each pregnancy is extremely valuable.
- Improving reproductive performance created additional financial returns in three ways:
 1. The amount of marginal milk produced
 2. Additional calves being born
 3. Cash expense when the open cow is replaced
- The economic gains from improved reproductive performance are greatest during times of high milk price and for herds with high production.

As you identify ways to improve reproduction on your farm, never lose sight of the financial implications of your decision-making. Regardless of your herd's reproductive performance today, minimizing unnecessary reproductive expenses can translate to profitable outcomes with more milk and more heifer calves.

1. Paul Fricke, Steve Stewart, Paul Rapnicki, Steve Eicker, and Michael Overton. Pregnant vs. open: Getting cows pregnant and the money it makes. UW Cooperative Extension. August 17, 2010. Available at: http://www.extension.org/pages/Pregnant_vs._Open:_Getting_Cows_Pregnant_and_the_Money_it_Makes. Accessed February 4, 2011.