

# Want to Improve Your Dairy Herd's Reproductive Performance?



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Getting cows rebred in a timely manner is one of the cornerstones of a more profitable dairy operation. To achieve this objective, one must constantly strive to maintain and improve pregnancy rates within one's dairy herd. Improving the 21-day pregnancy rate increases the yearly net return per cow (see table). Higher 21-day pregnancy rates result in cows potentially producing more milk over their lifetime, have a higher milk income in relation to feed costs, and have a lower risk of being culled for reproductive reasons. Thus, reproductive performance is one of those cornerstones found in profitable dairy operations.

21-day pregnancy rate	Value of Improving Pregnancy Risk \$ /cow/year
20% versus 22%	+ \$40
15% versus 20%	+ \$125
20% versus 26%	+ \$107
<b>Assumptions:</b> \$22/cwt milk at 3.8% BF, Feed cost at \$0.16/lb DM, \$18/mo repro cost Calculated using Dr. Victor Cabrera's spreadsheet analyzer ( <a href="https://dairymgt.info/markov/reader.php#fragment-8">https://dairymgt.info/markov/reader.php#fragment-8</a> )	

Often times, when we discuss areas that impact the success of a reproductive program we review heat detection methods, synchronization protocols, semen handling/insemination practices, fertility of the bull, vaccination programs, and efficient use of records in identifying cows needing to be bred and those confirmed open/pregnant. All of these are important when getting cows pregnant in a timely manner. However, feeding and management programs implemented during the previous lactation and dry period also impact a cow's current reproductive success or failure. Thus, management during the previous lactation and dry period are important for an on-going, successful reproductive program.

## Previous Late Lactation

Feeding and management programs during the previous lactation can impact a cow's health shortly after calving and her chances for a smooth transition from a dry cow to one lactating. Areas to specifically pay attention that relate to reproductive success in the next lactation include:

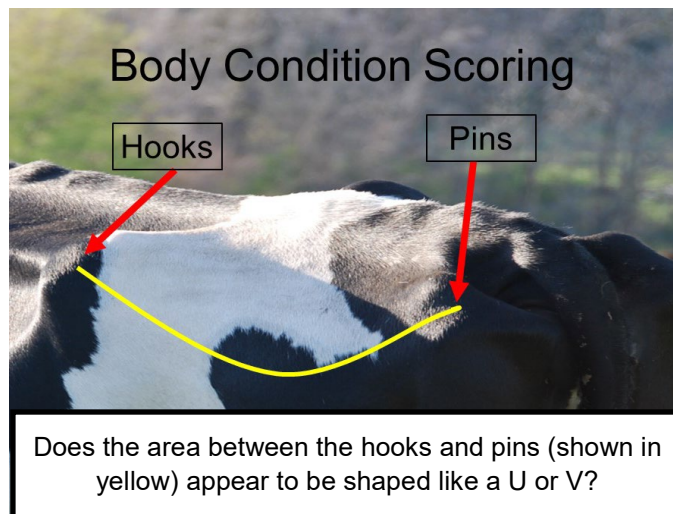
*Assess body condition of cows in later lactation:* Cows in mid- to later lactation need to regain body condition lost earlier in that lactation, but do not need to become over-conditioned. The saying, "a little is good but more is better", definitely is not true in this context. At the time of dry off, cows should have a body condition score of 2.75 to 3.25 out of 5.0. The dairy industry has changed what they define as an appropriate amount of body condition for a particular stage of lactation over the years with the current recommendation looking for cows to be a little thinner than previously. Ideally, the area between the hooks and pins should appear between a U and V shape (V shape less than a 3.0, U shape at a 3.0 or greater). For



help in body condition scoring cows, refer to [Elanco Animal Health publication](#). One point to remember, not all cows lose body condition in early lactation so assessing the amount of body condition on cows in mid lactation is important.

Different diets may be needed by late lactation cows to prevent them from becoming over conditioned and to get them to milk better in the current lactation.

Particular attention needs to be paid to lower producers and/or cows with long days open. Previous long days open (> 130 days open) starts a cycle where cows may get overconditioned and have issues after calving in the next lactation, with the cycle repeating itself the next lactation. For cows at a body condition score of 2.75 to 3.0, nutritionists can formulate diets containing adequate energy, but less starch, to allow cows to partition the energy in the diet toward making milk and not adding additional body condition.



### During the Early Dry Period- Far-off Dry Cows

Diets should be formulated on a routine basis, at least yearly if not more often, using current forage analyses. They should be formulated to supply adequate, but not excessive, amounts of energy and protein and provide adequate fiber for rumen-fill. The key is to maintain body condition in these cows and not over or underfeed energy. Maintaining rumen fill while providing adequate energy is important for these cows both during the dry period and after calving to help prevent metabolic diseases or related issues, such as ketosis and displaced abomasum. Both of these issues often result in rapid losses in body condition.

Adequate amounts of all minerals and vitamins should be provided and in a format (i.e. grain mix) that ensures they are consumed in the intended amounts. Proper amounts of minerals and vitamins are needed by the immune system to help fend off disease challenges, before and after calving as well as needed to prevent a variety of reproductive issues. Some minerals and vitamins also are stored in the tissues of the cow's unborn calf and are important to the calf after birth. For example, selenium supplementation has been related to cystic ovaries, metritis, and retained placenta in mature cows and white muscle disease in calves.

Reduce environmental stresses. For example, the effects of heat stress can be reduced by providing shade and fans plus sprinklers, if possible. Heifers calving for the first time may benefit from being housed such that they start getting adjusted to the post-calving interactions with other heifers and cows within 6 weeks of calving. Limiting mud and manure accumulation around outside feeding and watering areas also helps reduce stress.

### Dry Cows Within 3 Weeks of Projected Calving Date

Feed and manage cows within 3 weeks of calving differently than early dry period cows. Cows within 3 weeks of calving have many metabolic changes occurring to prepare for the upcoming birth, rapidly growing fetus, colostrum synthesis, and lactation. Rations need to be balanced to provide the nutrients needed and fed in a manner to stimulate intake especially close to calving.

Providing anionic salts in properly balanced diets (energy, protein, minerals, and vitamins) low in potassium to mature cows within 3 weeks of calving can help prevent milk fever and/or help the cow more quickly correct calcium imbalances normally seen after calving. Hypocalcemia or low blood calcium

concentrations within the first few days after calving (lasts past first day post-calving) has been associated with increased incidence of retained placenta, metritis, displaced abomasum, mastitis, and ketosis. With ketosis and these other metabolic disorders, cows can lose too much body condition too quickly, resulting in sub-par reproductive performance. Heifers calving for the first time do not need to be fed anionic salts.

Give these cows every opportunity to eat. Providing adequate amounts of bunk space (minimum of 36 inches/cow for post and rail, headlocks=30 inches/cow) and feed available at all times are extremely important to allow for maximum intake and thus rumen fill. Don't forget that water intake drives feed intake.

House cows in a "clean" environment that provides an adequate and comfortable resting space. These areas should be designed for the largest number of cows, not the average for the year. Designing these facilities for the average number of cows will result in overcrowding during times where a higher percentage of cows calve and potential problems for transition cows. This management practice not only reduces stress on these cows, but can help decrease the chances of mastitis. Cows with mastitis have been shown to have lower reproductive performance!

Heat abatement is very important for this group. Adequate shade, water, fans, and sprinklers are needed. Remember that these cows can undergo heat stress at additional times over the year not just during "the dog days of summer".