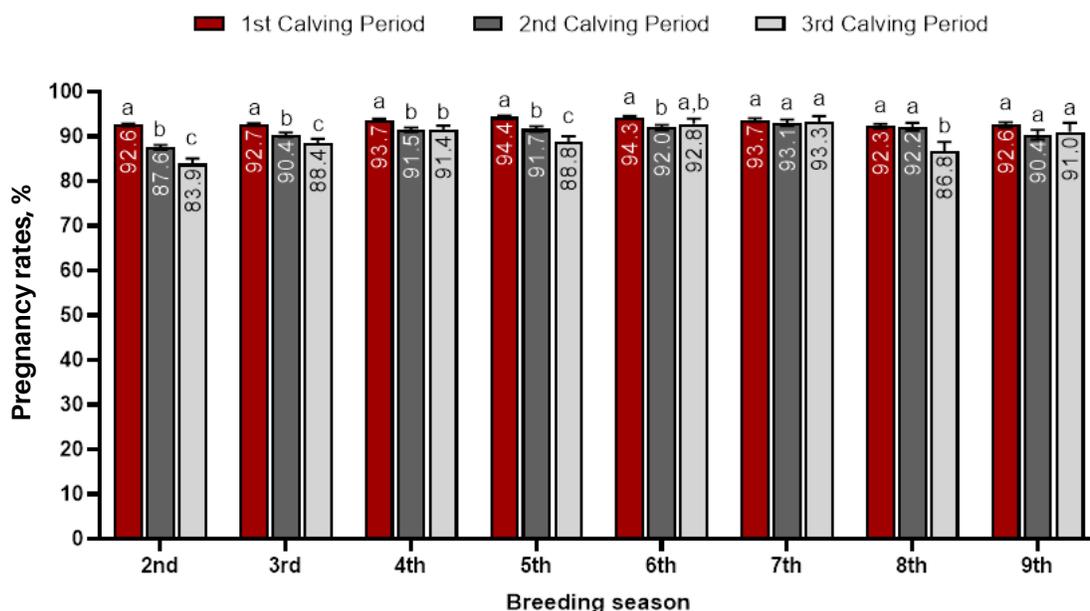


# Impact of early calving replacement heifers on cow-herd production and longevity

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As I write this article, the breeding season is coming to an end for most spring calving herds in the Southeast. While producers in the Midwest are busy setting cows up for the breeding season, here in Georgia, most of us are getting ready to pull bulls out of the cow herd and are starting to organize ourselves for the upcoming pregnancy diagnoses. Cattle producers commonly evaluate reproductive performance by determining how many cows became pregnant during the breeding season. Although pregnancy rates are important, when females become pregnant within the breeding season is also an important component of cow-calf profitability. This is particularly important for replacement heifers, as the timing of conception within the first breeding season has lifelong consequences on female productivity and her longevity in the herd.

A classic study (Cushman et al., 2013) performed at the U.S. Meat Animal Research Center (USMARC) evaluated the lifetime productivity of replacement heifers based on when, within a controlled breeding season, these heifers calved for the first time. The goal of this study was to evaluate if heifers that became pregnant within the first 21 days of the breeding season outperformed their counterparts that became pregnant later in the season. In this study, heifers were grouped into calving periods (first, second, and third 21-day calving periods) based on when they calved in their first calving season. Performance was evaluated in over 16,000 heifers that had the opportunity to stay in the herd for at least 9 years. Heifers that became pregnant early in their first breeding season, and consequently calved within the first 21 days of their first calving season (classified as 1st Calving Period), had greater pregnancy rates in their second breeding season compared with heifers that became calved later (classified as 2nd and 3rd Calving Period). Interestingly, the same results were observed over the next 5 breeding seasons (Figure 1).



**Figure 1.** Lifetime pregnancy rates of cows that calved at different periods of their first breeding season as replacement heifers. **1st Calving Period:** cows that calved during the first 21 days of their first calving season as heifers. **2nd Calving Period:** cows that calved between days 22 and 42 of their first calving season. **3rd Calving Period:** Cows that calved after day 42 of their first calving season.

The most probable explanation for the greater fertility in cows that breed early as replacement is the greater period of time that these cows had between calving and their next breeding season. This longer interval allows more time for females to recover from parturition and resume cyclicity before the next breeding season, maximizing their chances of breeding back early. Moreover, because a greater proportion of heifers that calved later in their first calving season were culled due to reproductive failure, females that calved early in their first calving season had greater longevity and stayed over a year longer in the herd compared with replacements that gave birth to their first calf later in the season.

Another major finding of this study was that heifers that became pregnant early in their first breeding season also weaned calves that were significantly heavier than the heifers that became bred later. This increase in weaning weights was observed throughout the first six calf crops that these females produced. In fact, these additional pounds of weaned calves from early replacements amounted to the production of an extra calf during their lifetime when compared to cows that calved later as replacement heifers.

Take a minute to think about the replacement heifers that are getting ready to undergo a final pregnancy diagnosis in the upcoming weeks. If you are in a situation where you have more heifers pregnant than your replacement needs, I would strongly encourage you to consider prioritizing replacement heifers that became bred early in your breeding season. Based on the data discussed above, these heifers on average produce two extra calves during their productive life compared to replacements that become bred later in their first breeding season. The first extra calf is the result of her remaining in the herd for an extra year, whereas the second additional calf is from the total additional pounds of calves at weaning observed across most of the productive life of heifers that calve early compared with heifers that calve later in the season. Finally, as we think about replacement heifers that will be weaned in the upcoming months, it is important to consider strategies that maximize their chances of becoming pregnancy early in their first breeding season.

