REPRO TRACKS

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Don't neglect the first-calf heifer!

For cattle producers, heifers that have just given birth to their first calf (first-calf heifers) are the toughest group of females to manage. Giving birth for the first time is a shocking experience for a heifer, but stress associated with the first birth also is confounded with numerous other management-related issues.

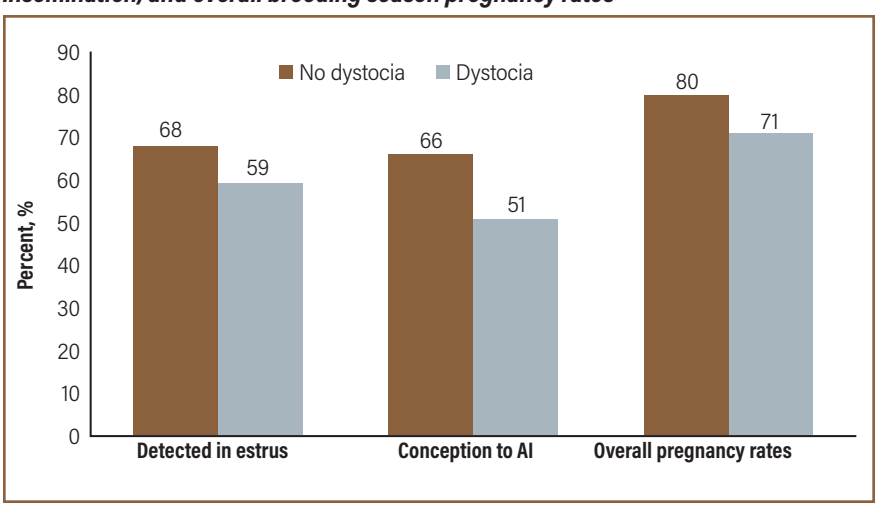
After birth, the first-calf heifer is required to nurse a young calf, her reproductive tract needs to undergo repair (uterine involution) to prepare for the next pregnancy, and she is required to maintain her own condition in order to become pregnant during the subsequent breeding season.

All of these factors are new to a heifer, and she is required to do this at a time when she is introduced to the mature cow herd. In other words, a heifer that has just given birth needs to compete with older, more aggressive cows for feed and yet continue to grow to a mature weight and become pregnant to calve during the following calving season.

These young cows need additional nutrients, because even though they are cows, they are still growing themselves; therefore, they need nutrients for their calves, and they need nutrients for further growth. With a little foresight, we can set the stage to allow these cows to have an opportunity to become productive mature cows.

In most herds, 15%-20% of the cow herd is replaced annually by replacement females. These replacement females represent the future genetics of the operation and could dictate the ultimate profitability of the operation.

Fig. 1: ***Effect of dystocia on detection of estrus, conception rates to artificial insemination, and overall breeding season pregnancy rates***



Source: Adapted from Laster et al., 1973.

Sound selection for females that will produce offspring on a yearly basis, nurture their offspring until weaning with a minimum of disease or sickness, and wean their offspring with acceptable weaning weights is paramount to a successful operation.

Management considerations

The management decisions on how we treat our replacement heifers usually affects their performance for a period of time following the birth of their first calf. In fact, when one considers that a replacement heifer remains in the herd for almost three years before she makes a financial contribution to the producer, it is imperative that we pay close attention to our selection and management of our future cows.

Nonetheless, the primary hurdle for a first-calf heifer to overcome is to become pregnant during her second breeding season. In most cattle operations, cows that do not calve once a year are culled or are good candidates to cull because they become an economic liability.

If we can ensure that our first-calf heifers are pregnant by the end of the second breeding season, most of our goals regarding first-calf heifer management will have been achieved.

The incidence of cyclicity in beef females at the initiation of the breeding season is reduced for first-calf heifers compared to replacement heifers or mature cows. As one would expect, in one study (Stevenson et al., 1997) a majority (88%) of the virgin heifers had reached puberty by the beginning of the breeding season. In the two groups of suckled beef cows, those cows that had given birth to more than one calf (multiparous cows) had a greater incidence of cyclicity than the first-calf heifers (primiparous cows; 74% vs. 53%, respectively).

This provides further evidence that first-calf heifers tend to have greater difficulty resuming their estrous cycles after calving than mature cows. Therefore, it is imperative to ensure that precalving management allows first-calf heifers sufficient resources to recover following calving, and yield acceptable fertility results.

Of critical importance to a producer developing their heifers to become productive cows is to ensure that heifers giving birth to their first calf will do so without calving difficulty (dystocia). First-calf heifers with greater incidences of dystocia tend to have poorer subsequent fertility responses (see Fig.1).

For example, females that had dystocia at calving had reduced rates of estrous expression, conception rates, and overall pregnancy rates. Any selection or management that a producer can do to reduce dystocia will have a positive influence on the ability of the first-calf heifer to become pregnant during future breeding seasons.

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Here are some key considerations to ensure that first-calf heifers have an opportunity to be productive cows:

- Feed replacement heifers to achieve a minimum of 55% of their mature weight by initiation of the breeding season.
- Utilize a prebreeding reproductive tract exam to eliminate heifers with underdeveloped reproductive tracts.
- Use pelvic measurements to identify heifers that have excessively small pelvic areas.
- Utilize expected progeny differences (EPDs) to ensure that heifers are bred to bulls with low birth weight EPDs and high calving ease EPDs.
- Use estrous synchronization when breeding replacement heifers — this will result in most first-calf heifers calving at the beginning of the calving season.
- Prepare replacement heifers to calve 2 weeks before the mature cow herd.
- Heifers should calve with at least a body condition score of 5 or greater.
- Use estrous synchronization on first-calf heifers to trigger postpartum estrous cycles.
- Shorten breeding season gradually by culling late-calving cows.
- Wean calves from first-calf heifers early to allow cows to gain condition.
- Feed first-calf heifers separately from mature cows to avoid competition for feed.

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