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Insuring Proper Heifer Development

Fall calving herds have likely already made selection decisions for the next group of replacement heifers, but if not, this might be timely and it is never too early to discuss this topic for spring calving herds as well. There continues to be buzz in the industry on national cowherd numbers continuing to contract and wondering at what point heifer retention numbers will point to expansion. Heifer development is a long and expensive process so it is important to control costs and optimize reproductive outcomes. One of the most important factors in heifer development is proper assessment of reproductive maturity.

General recommendations are that heifers should achieve a target weight of 60% of mature body weight by the onset of the first breeding season. Since mature cow size has increased over time, it is important to have a realistic estimate of the heifer's future mature weight. While age and weight are key determinates of the timing of puberty in heifers, they are not absolutes. Examples exist where heifers that should have been big enough and seemed to be cycling had a lower than expected heifer pregnancy rate. In these cases, there is rarely any hard evidence of actual reproductive maturity, despite larger heifer size.

Reproductive maturity can be assessed by palpation prior to the breeding season. Each heifer is palpated by a trained veterinarian during which the size and tone of the tract is evaluated as well as the ovaries and any structures on the ovaries. The reproductive tract score is a scale from 1 to 5 with 1 being infantile to 5 a cycling heifer with a corpus luteum. This system is a true evaluation of reproductive maturity and has repeatedly been shown to be related to heifer pregnancy rates.

Data from the Missouri Show Me Select heifer program illustrates the relationship between reproductive tract scores and weights. While the average weight of heifers increases from the most immature tract score to the most mature, there are still 1050 to 1100 lb heifers with tract scores of 1 and 2. For the most immature score, weight prior to breeding ranged from 375 lbs to 1100 lbs, for a 725 lb spread. Similar weight ranges exist for other scores, so weight alone cannot be used.

Along with reproductive tract scoring should be pelvic measurement, as this gives an indication of the heifer's ability to calve unassisted. Work with your veterinarian to have this measurement done as well. Knowledge of actual reproductive tract maturity & pelvic measurement prior to breeding allows time for ration adjustments, breeding adjustments or additional culling based on the number of heifers and the distribution of scores.

While it is important to pay attention to weight gain in developing heifers, weight alone may not tell the whole story. If reproductive tract scores are taken 40 to 60 days prior to breeding, when pre-breeding vaccinations are given, an accurate assessment of heifer maturity can be made and adjustments made accordingly. This may be especially worthwhile for those that plan to synchronize and AI heifers and want to reduce the risk of a poor response from pre-pubertal heifers.

In situations where heifers of unknown or unfamiliar genetics are being developed, this would be a valuable tool to reduce risk. Depending on how far in advance of the breeding season the scores are taken and how long the breeding season lasts, some tract score 1 and 2 heifers may mature enough to conceive before the end of the breeding season. Using a fairly short 30 to 45-day breeding season will naturally sort out those immature heifers, but will not conserve early pasture resources.