

## LIVESTOCK

# Post-breeding nutrition affects heifer pregnancy rates

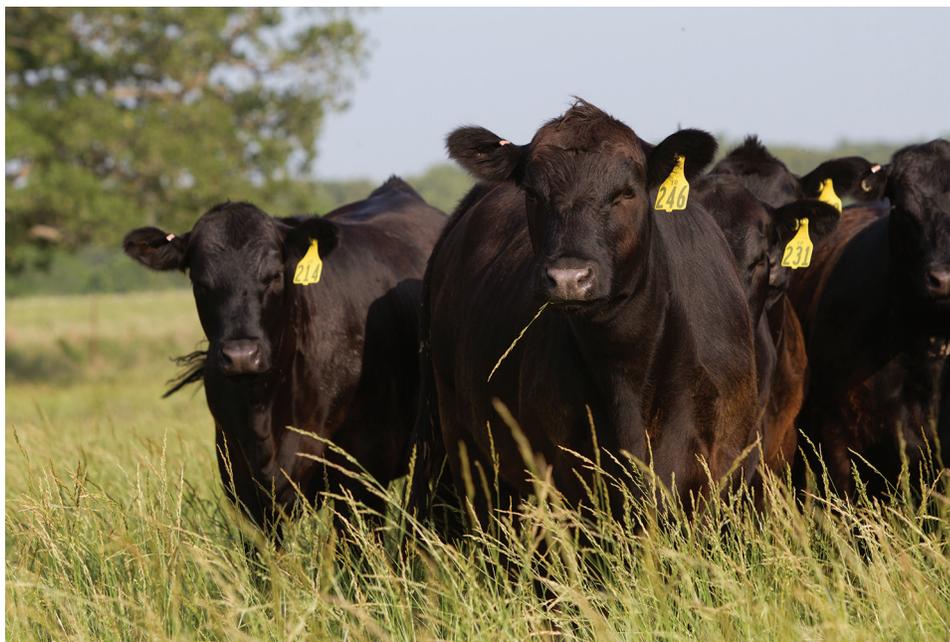
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**Heifer breeding** season is fast approaching. Achieving a desirable pregnancy rate in replacement heifers is contingent upon many things,

but it all begins with nutrition. The vast majority of articles discussing heifer nutrition focus on the pre-breeding phase and address the desired body weight and condition at breeding. Pre-breeding nutrition is imperative but post-breeding nutrition should also be given due diligence. The following two studies demonstrate this very well.

In a study by Arias et al. (2012) conducted in Wyoming and Indiana, Angus-cross heifers were developed in dry lots to 65 percent of their mature body weight at breeding with an average daily gain of 1.74 pounds per day. All heifers were bred by artificial insemination (AI) and assigned to one of three treatments: 1) diet formulated to continue gaining weight at pre-breeding rate (GAIN), 2) diet formulated to maintain weight (MAINTAIN) and 3) diet formulated to lose weight (LOSE). Treatments were imposed for 21 days. During this time, GAIN heifers gained 1.74 pounds per day, MAINTAIN heifers gained 0.13 pounds per day and LOSE



heifers lost 0.82 pounds per day. After 21 days, all heifers were commingled, turned out to pasture and exposed to cleanup bulls for 45 days.

First-service conception rates were 76.5 percent, 56.2 percent and 60.8 percent for GAIN, MAINTAIN and LOSE heifers, respectively. Season-long pregnancy rates were 96.1 percent, 85.7 percent and 84.3 percent for GAIN, MAINTAIN and LOSE heifers, respectively. A treatment imposed for only three weeks markedly reduced first-service conception rates by 15 to 20 percentage units and season-long pregnancy by approximately 12 per-

centage units.

Another Wyoming study examined the effect of post-breeding nutrition on conception rates, although from a slightly different angle. In this experiment, heifers were weaned in a dry lot for 45 days and turned out to pasture at least 30 days prior to breeding (EXPERIENCED) or were turned out to pasture immediately after breeding (NAIVE). There was no difference between heifers in percentage of mature body weight reached by the beginning of the breeding season (approximately 65 percent). Following breeding, EXPERIENCED heifers had ►

increased average daily gain compared to NAIVE heifers and higher AI conception rates (59.4 percent vs. 49.1 percent). Data from a previous study by the same authors showed that during the first week after pasture turnout, heifers with no previous grazing experience lost 3.5 pounds per day during the first week of grazing. Heifers that had been previously transitioned onto the pasture were gaining 1.94 pounds per day. Although the pasture the heifers were offered was high-quality, the transition onto pasture was stressful from a nutritional standpoint for a short period of time.

This can be deleterious to breeding success.

These studies demonstrate why it is imperative to avoid nutritional stressors on heifers that have recently been bred. Heifers should be maintained on a positive plane of nutrition after breeding. If heifers are to be turned out on pasture after breeding, it is best they are accustomed to grazing before breeding for at least 30 days. If they are not, these studies suggest turnout should be delayed for at least 21 days post-breeding. At the very least, adequate supplemental feed should be offered to help them

through the transition. ■

## References

- Arias et al. 2012. *Effects of post-AI nutrition on growth performance and fertility of yearling beef heifers*. Proceedings, Western Section, American Society of Animal Science. 63:117-121.
- Perry et al. 2013. *Evaluation of prior grazing experience on reproductive performance of beef heifers*. The Professional Animal Scientist. 29:595-600.