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Weight Gains and Pregnancy Rates in Yearling Heifers Fed Molasses

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This article summarizes two years of data collected on heifers grazing bahiagrass pasture and fed molasses-based supplements, with or without ammoniated hay, from weaning through breeding at one year of age. Heifers fed five lbs/head/d of a molasses-cottonseed meal slurry (77.6 percent standard molasses, 2.2 percent urea, 18 percent CSM as fed) and ammoniated hay had faster rate of gain (9.5 lbs/d) and weighed more at breeding (654 lbs) than heifers fed either molasses and ammoniated hay (.60 lbs/d; 603 lbs) or molasses + 4.5 percent urea and nontreated hay (.67 lbs/d; 623 lbs) during both years of study. Weight (627 lbs) and gain (.78 lbs/d) of heifers fed the molasses-CSM slurry and nontreated hay were intermediate, with gains dependent on year.

Researchers have determined that English-type heifers start cycling at about 50 percent of their mature weight. Since the first heat cycle is not very fertile, heifers need to have at least one normal cycle before the start of breeding. In practical terms, heifers should hit 50 percent of their mature weight about a month before breeding and be 60 to 65 percent of their mature weight at the start of breeding. With our Brahman crossbred heifers and supplementation program, we were unable to get more than a handful of heifers to 60 to 65 percent of their 1150 pound estimated mature weight. However, almost half of their heifers fed the molasses-CSM slurry and ammoniated hay reached 55 percent of their estimated mature weight by the start of the breeding season compared to about one-fifth of the heifers fed molasses and ammoniated hay, molasses-urea and nontreated hay or molasses-CSM and nontreated hay. Pregnancy rates after a 60 day breeding season were highest in heifers fed the molasses-CSM slurry and ammoniated hay (47.6 percent), and were lowest in heifers fed molasses-urea and nontreated hay (26.2 percent). Across all treatments, heifers that were unable to reach 55 percent of their estimated mature weight by the start of the breeding season had twice the pregnancy rate (60.0 percent) compared to heifers that did not reach this target weight (32.7 percent).

It is apparent from the results of this study that a supplement of molasses plus 4.5 percent urea fed with nontreated stargrass hay is unsuitable for obtaining desired weight gains and fertility in yearling heifers. In contrast, heifers fed a molasses-natural protein slurry with ammoniated hay appear to have a better chance of reaching a 625 to 650-pound target weight and becoming pregnant as yearlings. Regardless of the type of supplementation, it is also apparent from this and other studies, that heifers below a 625 to 650-pound target weight at breeding have a very poor opportunity to become pregnant as yearlings. It is important to determine mature cow weight for each operation and design a supplementation program that allows a large portion of heifers to reach that target weight in order for a yearling breeding program to be successful.