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MOLASSES-BASED SUPPLEMENTS FOR DEVELOPING HEIFERS

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Research with British cattle has shown that heifers calving first as two-year-olds have a higher lifetime productivity compared with heifers calving first as three-year-olds. However, less than half of Florida's cattlemen are attempting to breed heifers as yearlings. Low pregnancy rates during the first breeding season and delayed conception or failure to rebreed after the first calf due to limited nutrition and/or breed type may make the practice of breeding heifers as yearlings uneconomical. To address these questions, a major focus of the reproduction program at Ona is the development of replacement heifers.

Heifers used in studies at Ona consist of Braford, Senepol, and Simbrah sired females. Supplementation begins in October and continues through a 60 day breeding season beginning in March. Hay feeding typically begins in mid-December and continues until the end of the breeding season. In the first year's study (1989-1990) heifers grazed bahiagrass pasture and were supplemented with:

- a) Standard blackstrap molasses.
- b) Molasses-urea.
- c) Molasses-urea-feathermeal.
- d) Molasses-urea-cottonseed meal.

Heifers averaged 570 pounds at the start of supplementation. From the start of supplementation until the start of breeding, average daily gain (ADG) was greater for heifers fed molasses-natural protein slurries (.5 lbs/day) compared to heifers fed molasses-urea (.1 lbs/day). Heifers fed molasses only had an ADG of .3 lbs/day. Overall pregnancy rate was 37 percent. However, heifers reaching a target breeding weight of 600 pounds had a higher pregnancy rate (57 percent) compared to heifers not reaching 600 pounds (18 percent). More heifers fed the molasses-natural protein slurries reached the 600 pounds target weight (61 percent) compared to heifers fed molasses only (41 percent), or molasses-urea (33 percent).

In the second year's study (1990-1991), heifers grazed bahiagrass pasture and were fed ammoniated or non-treated hay supplemented with molasses-based feeds. Heifers averaged 525 pounds at the start of the study in the second year. Heifers fed ammoniated hay plus molasses-cottonseed meal had a greater daily gain (1.1 lbs/day) compared with heifers fed ammoniated hay plus molasses (.6 lbs/day), non-treated hay plus molasses-urea (.8 lbs/day), or nontreated hay plus molasses-cottonseed meal (.8 lbs/day).

While pregnancy rates have not been confirmed, more heifers fed ammoniated hay plus molasses-cottonseed meal reached the 600 pounds target weight (95 percent) by the start of the breeding season compared with heifers fed ammoniated hay plus molasses only (57 percent), non-treated hay plus molasses-urea (67 percent), or non-treated hay plus molasses-cottonseed meal (62 percent).

From our studies and the results of others, it is apparent that heifers exposed to bulls as yearlings must reach a minimum weight before pregnancy will occur. The 600 pounds target weight used above is based on a 1000 pound mature cow, and the requirement that a heifer's target breeding weight must be 60-65 percent of matured cow weight. Producers need to know mature weight of their cow herd and weaning weight of their replacement heifers in order to identify a supplementation program that will achieve a high percentage of replacements reaching their target breeding weight. Producers interested in obtaining additional information may contact the author at 941-735-1314.