

# Research Summaries

BEEF

Moderator: Grant Dewell

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## Economic Value of Beef Heifer Reproductive Tract Scoring

**Mel Pence, DVM, MS, PAS, Diplomate ABVP (Beef Cattle)<sup>1</sup>; Jerry Baker, PhD, PAS<sup>2</sup>; Tim Wilson, MS, PAS<sup>2</sup>; Johnny Rossi, PhD, PAS<sup>2</sup>; Rhonda Vann, PhD, PAS<sup>2</sup>**

<sup>1</sup>College of Veterinary Medicine

<sup>2</sup>College of Agriculture and Environmental Science  
University of Georgia, Athens, GA 30602

### Introduction

The selection and management of replacement heifers influences the reproductive efficiency of the beef cattle industry. The largest single potential income improvement in the beef cattle industry is in the area of reproductive efficiency. For each 21-day heat period a cow calves late in the breeding season, she weans a calf that is 40 lb lighter. For a cow to calve early in the breeding season she must calve early as a heifer. It is extremely difficult to step-up breeding dates on a young cow. In order for a heifer to calve early in the breeding season, she must reach puberty early. Age at puberty is determined by age, nutrition and genetics. A contemporary group of heifers that are of similar age and have been managed and fed as a group will vary in their age at puberty because of genetic variation.<sup>1</sup> Reproductive tract scoring (RTS) is a method of estimating the pubertal status of a heifer and the genetic ability of a heifer to breed early in the breeding season and conceive at an acceptable rate.<sup>2</sup> RTS is determined by rectal palpation of the uterus and ovaries within a contemporary group of heifers 30 to 60 days prior to breeding, and scored from one to five based on these findings. Generally, a score of four or five indicates the heifer has reached puberty, a score of three is slightly pre-pubertal, a score of two is immature and a score of one is very immature. Using RTS a reasonable estimate of the ability of heifers to breed early in the breeding season can be determined.<sup>3</sup> Our study investigated the economic value of RTS.

### Materials and Methods

RTS of 204 beef heifers from five locations in Georgia were determined prior to breeding of crossbred beef

heifers with a mean age of 427 days. Heifers at all locations were synchronized using a MGA and prostaglandin protocol, bred AI following observed estrus, and then natural service breeding. Breeding seasons ranging from 66 to 84 days.

### Results and Conclusions

The overall calving rate was 86.2%. Heifers with a RTS of 5 had an average calving date 16 days earlier than those with a RTS of 4, and 35 days earlier than heifers with a RTS of 3. If calves average 2 lb per day of age at weaning, then the value of a heifer with a RTS of 5 verses a RTS of 3 is 70 lb, or \$50.00-70.00, depending on the calf market. The value of a heifer with a RTS of 4 verses 3 is 32 lb, or \$22.00-32.00. It is unlikely that the later calving heifers will decrease their calving interval more than the early calving heifers, so this relationship is likely to continue into the second calving. Therefore, the value of a heifer with a RTS of 4 or 5 compared to a RTS of 3 might reasonably be estimated at \$60.00 and \$120.00, respectively. Beef heifer development programs can utilize RTS to select for improved pregnancy rate and decreased average calving date. These results will add value to the heifer selection process.

### References

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