Phenotypic Database to Support Genomics Assessment of Beef Cattle

The beef cattle industry is important to the national economy as well as that of Texas. To realize the full potential of this industry will require the application of genomics and marker-assisted breeding. Extensive phenotypic information is necessary to support genomic research into markers for breeding purposes. Validation of markers must be done in both Bos taurus (adapted to cooler climates) and Bos indicus (adapted to hot climates) strains of cattle, as they differ genetically in populations for the United States and the world.

Process
A registered Brahman herd has been maintained for more than thirty years with pedigree, growth, and reproduction records. In addition, a herd of F-1 Angus × Brahman and Hereford × Brahman females has been produced from the Brahman herd. The phenotypic data include the following:

- Pedigrees on the Brahman herd
- Lifetime reproductive performance on both herds
- Temperament data on more than 500 Brahman females and males
- Feed efficiency records on more than 200 Brahman females and males
- Tissue samples have been stored at –80°C from a larger number (>500) of animals for future genomic evaluation.

Objectives
The objectives for this research is to identify genetic markers for traits of interest in Bos-indicus-influenced cattle and to estimate linkages and relationships between markers for key traits.

Outcomes
Production of a suite of genetic markers that is applicable in Bos indicus and Bos taurus × Bos indicus cattle for temperament, reproductive efficiency, feed efficiency, growth rate, and immune response.

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