

**Genetic Markers in the Calpastatin Gene Associated with Beef Tenderness**

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Genetic markers or SNPs (single nucleotide polymorphisms), are small fragments of DNA with a known location on a chromosome. These SNPs are associated with a specific gene or trait such as carcass quality and final cut characteristics, as well as tenderness, juiciness, and flavor. This is important because if a set of SNPs that affect carcass properties and palatability traits can be identified, they can be used to identify genetically superior bulls early in life for breeding or can be used to predict desirability for marketing purposes leading to higher and more consistent beef quality. For this study, 502 animals from the UF Angus-Brahman multibreed herd were used to investigate the role of a SNP in calpastatin gene in beef tenderness. DNA was extracted from blood using DNeasy Blood & Tissue Kit (Qiagen). A real-time PCR and high resolution melt curve analysis was performed for one SNP in the calpastatin gene. All three genotypes (GG, GC and CC) were observed in this population, however, the frequency of the GG genotype was very low (0.01). An association analysis was performed to determine if the SNP had an effect on beef tenderness measured by Warner-Bratzler shear force. It was found that the CAST1 SNP was not significant across genotypes. However, it was found that there was a trend for the Warner-Bratzler shear force to be higher (tougher meat) in animals with higher Brahman percentage. This is consistent with previous studies that showed Angus beef tends to be more tender than Brahman beef. Based on the findings of the present study, further investigations are needed either using other polymorphisms in these genes or with larger sample size for the GG genotype.