

**Project Title:** Effects of Supplemental Vitamin D<sub>3</sub> on Various Tissue Residue Parameters of Beef Steers

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**Laymen's Summary:**

As stated in the latest National Beef Quality Audit inadequate and inconsistent tenderness has been a problem in the beef industry. This issue has certainly become more of a "top-of-mind" issue with the advent of many packer/processor brand products making specific claims regarding palatability. Consequently, tenderness enhancement has become a major area of research in terms of developing new techniques/procedures that potentially could improve the tenderness of meat products available for the consumer to purchase. Pre-harvest supplementation with vitamin D<sub>3</sub> (VITD) to market-ready cattle has been shown to improve beef tenderness. The current research was conducted to determine the effects of supplementation of beef steers with VITO on tissue residue accumulation of VITO as well as two of its metabolites, 25-hydroxy vitamin D and 1,25-hydroxy-vitamin D. Approximately 250 cattle were fed differing amounts of VITO ranging from Cup through 12 days prior to harvest. Results indicated that supplementing cattle with 1.0 million IU of VITO for up to 12 days prior to harvest would allow for improved Longissimus tenderness while producing a safe, wholesome product. The beef industry anxiously waits for the final ruling and approval of the appropriate Federal Agencies.

