

## CALM CATTLE HAVE BETTER RESPONSES TO WEANING VACCINATIONS

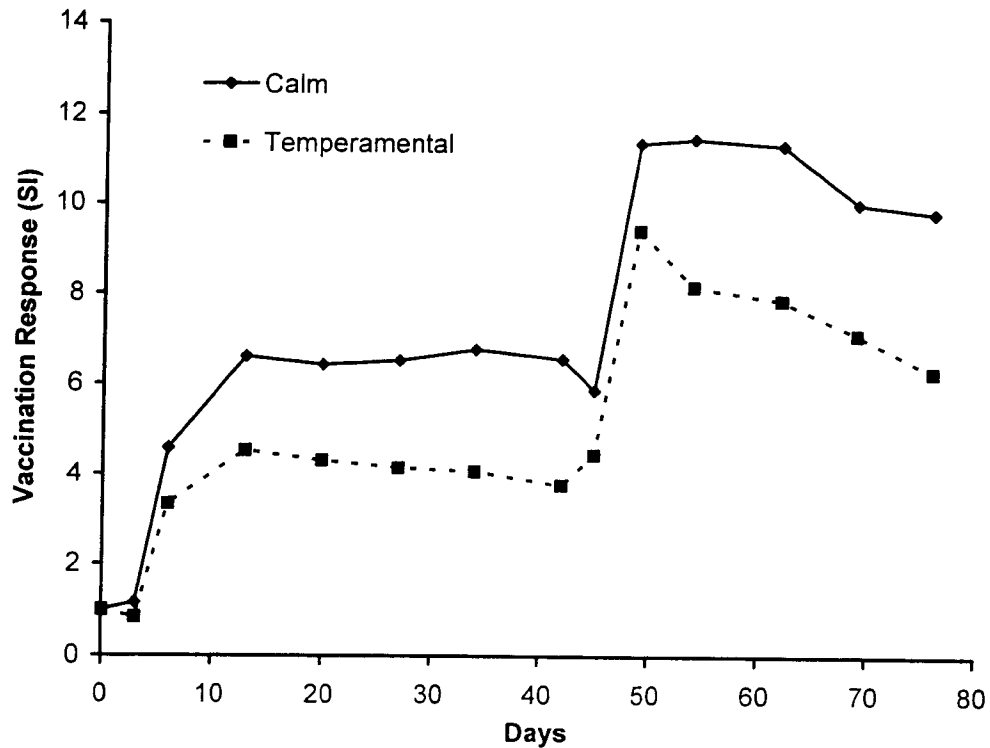
R. Oliphint, T.H. Welsh, Jr., J. C. Laurenz, J. A. Carroll and R.D. Randel

**Background.** Cattle with a calm or less excitable response to handling have been shown to out-perform their more temperamental counterparts in the feedlot and in carcass traits. Not only has animal temperament been found to negatively affect growth and carcass performance, but it has been shown to negatively affect the immune system as well. The effectiveness of vaccines given to calves is important in conferring immunity to common diseases at times when they are at a higher risk for infection. Cattle with impaired immune responses, due to undesirable temperament, may have a greater difficulty in providing a sufficient response when challenged with disease causing organisms in production or feedlot situations. This report provides some insight into different ways cattle respond to handling and may lead to improvement in animal welfare and health which consequently should increase efficiency of producing higher quality beef.

**Research Findings.** Brahman bull calves from the spring 2004, TAES-Overton calf crop were sorted into temperament groups based on pen score and exit velocity (EV) from restraint in a squeeze chute. The 10 calmest (avg. EV 4.46 f/s) and the 10 most temperamental calves (avg. EV 9.51 f/s) were chosen and put on an 11-week trial in which immunization response to the Clostridial vaccine Fortress 8 (Pfizer; Exton, PA) was measured. Vaccinations were given at the beginning of the trial and a secondary booster was applied 42 days later. Both groups of calves had a significant immune response 6 days post-vaccination, with peak responses occurring on day 13 after the initial vaccination. By day 42, the calm calves had a 1.74-fold increase in antibody response. Peak responses to the secondary booster by the temperamental and calm calves were at days 49 and 54 respectively. From day 49 until the end of the study, the temperamental calves antibody response had decreased more than 3.00-fold, while the antibody titer in the calm calves did not significantly decrease. On the final day of the study, the calm calves had a 1.56-fold increase over the temperamental calves in antibody response. Not only did the calmer calves have a greater response to the vaccine, they did a better job of sustaining antibody levels previously produced. In addition to the benefits of increased vaccination response, the calm bull calves out-gained their more temperamental counterparts by more than 0.3 pounds per day over the length of the study.

**Application.** If individuals or groups of cattle can be identified as having a higher risk of infection or suppressed immune responses to vaccines, management practices can be altered to

reduce risk associated with cattle morbidity and mortality. Calmer calves may have a better response to vaccination at weaning and would have reduced sickness and death loss as they move through the production system. Calm calves will be more profitable than temperamental calves for all segments of the beef industry.



Vaccination Response to Fortress 8 Clostridial vaccine in calm and temperamental bull calves. SI = stimulation index based upon initial antibody levels.