

## Study: Zilmax has no apparent detrimental effect on cattle health

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LINCOLN—The cattle feed additive Zilmax has no noticeable detrimental effect on cattle health or well-being, according to research by scientists from the University of Nebraska-Lincoln and U.S. Department of Agriculture's Agricultural Research Service.

The study was undertaken after Zilmax's maker, Merck Animal Health, temporarily suspended sales of the additive last year when concerns emerged in some quarters that it might cause lameness in cattle, said Ty Schmidt, a UNL animal scientist, who worked with colleagues including Jeff Carroll and Nicole Sanchez, both of USDA-ARS.

During the 26-day study, scientists collected blood, via catheters; body temperature; and video images from 20 heifers, which were divided into two groups, with half receiving Zilmax at the recommended dose and half not receiving it. On the last day of the trial, four days after Zilmax supplementation was discontinued, heifers were exposed to a simulated stress event to mimic the stress response that would be anticipated in cattle being shipped from the feedlot to packing plant. At the conclusion of the trial, heifers were harvested at UNL and their hearts, liver, lungs, kidneys and adrenal glands were studied.

Results from the study demonstrated some differences in physiological and endocrine markers of stress and muscle accretion in heifers that were supplemented with Zilmax compared to heifers not fed Zilmax. Heifers fed Zilmax had an increase in parameters that indicate increased muscle mass. The increase in these parameters was expected, as the drug label for Zilmax includes statements pertaining to increases in creatinine and creatine phosphokinase, Schmidt said.

Results from this study, he added, also demonstrated that heifers supplemented with Zilmax had a decreased production of the stress hormone cortisol, and decreased body temperature during the simulated stress event. Histopathology of the heart, lungs, liver, kidneys, and adrenal glands revealed some differences between the heifers supplemented with Zilmax and the heifers not receiving Zilmax. The livers and right adrenal gland of the Zilmax heifers were slightly smaller than heifers that were not fed Zilmax, but there was no difference in lungs, kidneys, or heart.

"Overall, the results of this trial indicate that while there are variations in the body temperature, endocrine and metabolic parameters and histopathology of major organs of Zilmax supplemented heifers, these differences are minor and show no indication that supplementation of Zilmax is detrimental to the health or well-being cattle," Schmidt said.

In addition to Schmidt, Carroll and Sanchez, others who participated in the study were: Steve Jones and David Steffen, UNL, and graduate students Joe Buntyn and Sara Serien, also of UNL.