EFFECTS OF GROWTH-PROMOTING TECHNOLOGY ON FEEDLOT CATTLE BEHAVIOR IN THE 21 DAYS BEFORE SLAUGHTER

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There is growing interest in the animal welfare implications of growth-promoting technology used in feedlot cattle. Little work has evaluated behavioral changes associated with androgen-based implants or β2-adrenergic agonists. Our objective was to quantify the effects of these technologies on lying and agonistic behavior in the 21d before slaughter. Angus crossbred steers were assigned to 16 pens of 10 animals each. Treatments were 1) control (CON; no technology application), 2) monensin and tylosin phosphate (MON), 3) monensin, tylosin phosphate, and growth implant (trenbolone acetate and estradiol, IMP), and 4) monensin, tylosin phosphate, growth implant, and zilpaterol hydrochloride (fed d24 to 3 before slaughter; BAA). Agonistic (pushing, displacements) and bulling behaviors were recorded on d21, 17, 12, 7, 3d before slaughter and lying behavior, including time and number of bouts of lateral and sternal lying, was measured on d12, 7, and 3. These time points were chosen to overlap with the feeding period for zilpaterol. BAA cattle spent 26% more time lying laterally, compared to all other treatments (BAA: 2.4 vs. others: 1.7, SE: 0.18 h/24 h, P=0.019), perhaps because of changes associated with rapid muscle growth. Total lying time decreased by 5% as steers neared slaughter and this change was driven by a 10% reduction in sternal lying (Ptime≤0.005). Both BAA and IMP cattle engaged in more agonistic behaviors (pushing and displacements) than MON or CON. Together, these findings indicate that growth-promoting technologies, particularly androgen-based implants and β2-adrenergic agonists, affect both agonistic and lying behavior in the days before slaughter.