

2017 Reciprocal Meat Conference – Animal Welfare

Meat and Muscle Biology™



Observations of Pen Stocking Capacities for Overnight Lairage of Fed Cattle at Harvest Facility

H. C. Kline*, D. R. Wagner, M. S. Martin, and T. Grandin

Department of Animal Sciences, Colorado State University, Fort Collins, CO, USA

Keywords: cattle, lairage, pen capacity, slaughter, weight
Meat and Muscle Biology 1(3):3

doi:10.221751/rmc2017.003

Objectives

Fed cattle slaughter facilities often have cattle delivered to the facility with the intention to hold the cattle overnight. As required by USDA FSIS, cattle that are held overnight at the harvest facility are required to have lying space in pens. The current guideline in industry is 1.86 m² per animal at an estimated live weight of 544.31 kg. However, cattle weights have increased over time while the space to lie down has remained constant.

Materials and Methods

This field observation was designed to determine if 1.86 m² is enough space for a *Bos taurus* steer or heifer, with no *Bos indicus* or Holstein influence, to lie down, with an assumed live weight of 544.31 kg. This field observation evaluated space requirements for cattle that varied in average weight from 521.63 kg to 717.13 kg. It was hypothesized that the pen space requirements would not differ based on average live weight of the cattle. This field observation utilized a random incomplete design over a 5 d period. Pens were selected for adequate lighting, distance away unloading docks, and distance away from entrance to the harvest facility. The pen dimensions were measured before daily production began and aver-

age weights of the cattle were obtained from the harvest facility scale house. Once the selected overnight pens were filled with a mixture of British and continental bred cattle, cameras were placed on the catwalk to capture video and photographs of the cattle lying down between 0200 h and 0400 h each d. Video and photographs were taken with a remote control so that the cattle were not disturbed by individuals on the catwalk.

Results

In this field observation, 1584 cattle were observed and it was determined that as the weight of the cattle increased the space allocation needed to be increased to have enough space for all cattle to lie down. The space allocations estimated were a 544.31 kg animal required 1.86 m² per animal, a 589.67 kg animal required 1.95 m² per animal, a 635.03 kg animal required 2.04 m² per animal, and a 680.39 kg animal required 2.14 m² per animal. Space requirements did differ as average weight of the cattle increased.

Conclusion

Further observations are needed to fully determine the effect that average live weight has on pen space requirements of cattle at slaughter facilities.