

# Bacterial Counts in Recycled Manure Bedding Replaced Daily or Deep Packed Free Stalls

**Author:** Dana Sorter

**Major:** Animal Science

**Project Advisor:** Joe Hogan

A six week study compared bacterial counts of mastitis pathogens in deep packed manure bedding with those in manure bedding replaced daily. Eighteen Holstein cows were housed in one pen with eighteen stalls. One row of nine stalls was equipped with mattresses topped with bedding. The bedding was removed weekly and replaced with 30 kg of fresh recycled manure. The back of the stalls were covered in 25 mm of recycled manure. All bedding was removed from the back of these stalls for the next six days. Bedding was pulled from the brisket area to restock the back of stalls. The second row of nine stalls was bedded with 100-150 mm of deep pack recycled manure. The two rows of stalls received the same treatments for 3 weeks, after which treatments were changed between rows. Mean total Gram-negative bacterial counts did not differ between treatments throughout the whole trial. However, mean Gram-negative bacterial counts were reduced on day (d) 0 and 1 in bedding from daily replacement stalls compared with deep pack stalls. No differences existed in Gram-negative bacterial counts between treatments on day 2 and 6. Coliform and *Klebsiella* spp. bacterial counts were lower in daily replaced bedding compared to deep pack across the entire experiment and on each of d 0, 1, 2 and 6. Streptococcal counts did not differ between treatment groups across the entire trial, but differences were observed within each day. Streptococcal counts were reduced in daily replacement stalls compared with deep pack stalls on d 0. However, streptococcal counts were greater in daily replacement stalls compared with deep pack stalls on d 1, 2, and 6. Daily replacement of recycled manure bedding from the back one-third of stalls appears to be an effective approach to reducing exposure to coliforms, specifically *Klebsiella*, but not streptococci.