Practices That Might Impact Udder Health  
Dr. Donald E. Pritchard  
NCSU Extension Dairy Specialist

Progressive dairy producers should always be looking for herd management practices that might affect the udder health status of their cows. In the December 2005 issue of the Journal of Dairy Science there were two research reports that producers might want to factor into the management decisions they make.

The first study conducted by researchers from Pennsylvania and Ohio compared the bacteria populations in clean and recycled sand used for bedding in dairy facilities. This study should be of interest to producers who are already using sand as bedding and are considering using recycled sand. The study may also be of interest to producers who are having difficulty obtaining wood shavings or sawdust or straw, or are experiencing udder health problems caused by their bedding material, and are considering changing to sand.

Bedding samples were collected in both the winter and summer from commercial dairies that were using either clean sand or recycled sand. The composite samples were sub sampled and analyzed for dry matter percent and cultured for the types and numbers of bacteria present. The researchers reported that “The results from this study suggest that bacterial populations and numbers were similar for both clean sand and recycled sand in either summer or winter.” They further stated that either type of sand could safely be used to bed free stalls, as the number of coliform and Klebsiella spp. in both sand types were below the generally accepted thresholds thought to cause mastitis. The researchers did find, however, that there was a high level of Streptococcus spp. in both sand types on day 1 after sand was placed in the stalls, and persisted through day 7 in both the winter and summer. Why this occurred is unknown, and further study is needed into the effects of sand source, particle size and other management factors on Streptococcus spp. populations in the sand. Producers who are either already using or are considering using sand as bedding should keep this finding in mind.

The second study published, also from Ohio researchers, looked at various physiologic and immune system responses to feeding selenium from two different sources (inorganic or organic). In this study dry and early lactation cows were fed diets containing either selenite or selenized yeast at the 0.3mg/kg of dry matter level. In all the parameters measured (blood, serum, colostrum, milk), the feeding of selenized yeast resulted in higher levels of selenium. This finding would suggest that the immune systems of cows consuming the selenized yeast diet should have been more effective at killing bacteria. This was not the case, however. When blood neutrophils were isolated and used in an in vitro kill assay of Escherichia coli 487 there was no difference in kill rate response due to the selenium source fed the cows. Other researchers have also reported no response difference in kill rate of Staphylococcus aureus by neutrophils of cows fed the two types of selenium. So, while the elevated serum levels of selenium may provide other health benefits to both cows and their new born calves, this study suggests that feeding organic selenium appears to provide minimal, if any, increase in resistance (immune system response) to bacteria invading the mammary gland and causing new udder infections. Producers should discuss the pros and cons or necessity of feeding organic selenium with their feed consultant and veterinarian before incorporating the use of it into their cattle diets.