Udder Health Affected by Bedding Management

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The hot, humid days of summer are upon us, and so are the conditions that cause somatic cell counts to increase. One of the important causes of increased SCC values is the bedding material used for cows to lie on, and the management of that material. Researchers at the University of Minnesota reported on this important relationship in the Proceedings of the 41st Annual Meeting of the National Mastitis Council.

Minnesota DHIA data revealed that 35% of first calf heifers entered lactation with elevated (>200,000) SCC values. Additionally, about 35% of older cows also had elevated (>200,000) SCC values during the first month of lactation. Several researchers have found that most of these type of elevated SCC values are due to infections that occur during the last two weeks prior to freshening, or during the first 21 days or so following dry off. In older cows about 60% of new udder infections occur during the early or late dry period. The bedding conditions that cows and heifers are exposed to during these critical times are very important in affecting the rate of new udder infections.

Researchers have found that environmental organisms (gram-negative and several types of streptococci), along with coagulase negative staphylococcus, are most frequently the cause of udder infections. They have also found that the bacterial populations on teat surfaces closely reflect those found in bedding materials. So, it is very important to minimize the bacterial population in the bedding material to reduce the bacterial load the teats are exposed to between milkings.

In choosing a bedding material, and then in managing it, several factors or guidelines should be considered and followed:

1) Dry clean sand does not provide the nutrients or moisture that bacteria need to grow, and so sand is usually the material of choice by most researchers. However, since many manure systems can not handle sand, some type of organic material is used instead. Sawdust or wood shavings are often used. In general, pine, cedar and other softwoods do not support bacterial growth as well as oak and other hard woods. Straw supports bacterial growth better that wood shavings or sawdust.

2) The particle size of the bedding material is important in determining bacterial growth rate. Large particle bedding supports the least amount of growth. Fine particles tend to stick to the teats and udders, and are potentially more of a problem in controlling bacteria numbers on the teats, especially if poor milking preparation procedures are used. Use a pre-dip to reduce the number of environmental bacteria on teats prior to milking.

3) Keeping the bedding material fresh and clean is very important. Add new material as needed (1-2 pounds of an organic material daily per cow), and clean out stalls (at least the back half of them) weekly. Clean bedding material is often placed in the front part of the stalls once a week, and then is raked back as needed during the week. When cows pull back the bedding they use dirty feet which can contaminate the bedding material.

4) If sand is used don’t till or turn it, because when doing that the contaminated sand from the surface is moved down into the cleaner sand below it. If sand is recycled, wash it with clean water. Keep the sand depth leveled at over 6 inches for cow comfort.

5) Adding about 2 pounds of hydrated lime to the back 1/3 of each stall that is bedded with an organic material can reduce the growth rate of bacteria, but only for about 1 day. This practice should be considered as a bacteria control method only in special situations.
Keeping bacteria numbers low in the bedding material cows lie on is important in reducing new udder infections. By lowering the intramammary infection rate in a herd, a dairy producer can obtain higher quality milk and more milk from his cows. These benefits should result in greater profitability. Consult with your veterinarian, milk co-op or plant fieldman, Extension agent/specialist, or other dairy consultant for additional guidelines and advice on this important management topic.