

Does Flooring Matter?

Anecdotal evidence suggests that cows housed in facilities with rubber floors have an advantage over those with concrete floors in maintaining hoof health. However, it is very hard to find controlled research trials that support this idea. Recently, researchers from Ireland reported on a trial where they housed cows from calving through 16 weeks on either rubber flooring or concrete. They reported a slight reduction in heel erosions for cows on rubber at peak lactation, but found no other differences in hoof health measures (hemorrhage or dermatitis). They observed that cows housed on concrete tended to stand in their stalls a greater amount of time than those housed on rubber and believe that this may have minimized differences between the two groups. They remind dairy producers to consider the entire facility and not focus on a single component when trying to improve cow comfort. If pens are over crowded or stalls are wrongly sized or poorly managed, the probability of usefulness for rubber flooring should increase.

Tracking Important Health Parameters

It should be obvious that healthy cows produce more milk. But what measures of "health" should a farm track. Some things recommended for feedlots also can be useful for dairies. These include mortality rate (number dead/total cows), percent first treatment response (total initial treatments – total treatment failures)/total initial treatments), morbidity (total treatments/total cows), hospital pen population, and chronic infection rate (total diagnosed as chronic/total treatments).

Calves do not like "fines"

It is always a challenge making a calf starter without fine particles. The pellets fall apart, the feed does not pellet well to begin with, or the corn in a textured starter is processed too fine. A trial was just completed where a textured calf starter (40% coarsely rolled corn, 35% pelleted supplement, 20% whole oats, and 5% molasses) was fed to half of the calves. The other half of the calves received half of the same textured starter and half of a starter made as a meal.

The meal portion was the same ingredient and nutrient composition as the textured starter. Calves were fed 1.5 lb of Pinnacle milk replacer powder daily and weaned at 28 days. Calves fed the starter with half meal consumed 11% less starter, gained 6% less body weight, and had 8% less hip width change from 0 to 56 days than the calves fed all textured starter. Feeding calves a starter with fines significantly reduced intake of starter, which reduced growth of the calf.

Microbial, yeast, and oligosaccharide products for calves

At the national Dairy Science meetings in Texas this past summer, there were several abstracts on the use of microbial and yeast products in calves. Cannon et al. (M339) evaluated a *Bacillus subtilis* plus *Bacillus licheniformis* product fed via the MR and starter and reported no change in calf performance. Wehnes et al. (W23) fed a *Bacillus*-based product with the electrolyte administered to scouring calves and observed better gain during week 1 when scouring calves received the product. This test product did not change overall performance measures. Magalhaes et al. (M341) fed calves starters containing 0 and 2% Diamond V XPC yeast culture in an on-farm demonstration. Feeding XPC did not change gain, intake, or efficiency of the calves, but did improve some measurements related to health. Nocek et al. (165) fed calves pasteurized milk with Biomos, Celmanax (both are mannan oligosaccharides), or no additive and reported no differences in calf performance. Ziegler et al. (M347) fed calves milk replacer with mannan oligosaccharides (Biomos), fructo oligosaccharides (inulin), both additives, or no additive. No differences in calf performance were reported. Additionally, we could not find any manuscripts on this topic in the major U.S. science journals over the last 3 years. Until more data are available on a specific product of this type to show effectiveness, their use in dairy calves is discouraged.

The time for fly control is now

Even though it is rather cold right now, it is time to plan a fly control program for this upcoming season. An integrated program that uses multiple approaches is recommended for optimal fly control. These programs include things such as maintaining clean facilities, use of fly bait stations, use of parasitic wasps, feeding oral insecticides, and use of topical insecticides. Not all of these options are needed on all farms, but by carefully considering your farms challenges and opportunities now an effective fly control program can be implemented.

Dairy Cattle Encyclopedia of Reproduction

The Virtual Dairy Cattle Encyclopedia of Reproduction is a web-based teaching tool designed to provide information on the fundamentals of dairy cattle reproduction, new technologies and the importance of reproduction to dairy farm profitability. It was developed by Animal Scientist at Michigan State University. It is a useful tool for students, dairy producers, farm employees and veterinarians alike. The pictures, charts and diagrams utilized are designed to illustrate real-life examples. The quizzes accompanying each section are designed to test your knowledge of the concepts covered in each section. A glossary section is provided for definition of words denoted in bold in the text. To access this web-based learning tool go to the recent issue of The Michigan Dairy Review (<http://www.msu.edu/user/mdr/>). There is a Virtual Dairy Cattle Encyclopedia icon on the left hand side of the first page that you can click on to start.

Re-evaluate Feed Efficiency

High feed prices coupled with lower milk prices mean smaller profits for dairy producers. At the Penn State Dairy Cattle Nutrition Workshop, Dr. Mike Hutjens from the University of Illinois presented 7 measures of the economics of feeding programs. Feed cost per cow per day remains as an economic indicator for most farms. However, Dr. Hutjens reminds us that this does not reflect milk production, stage of lactation or other measures of nutrient requirements or usage by the cow. Feed cost per pound of dry matter is a useful measure for comparison within regions, but users are cautioned that regional differences in ingredient prices have a large impact. To standardize cost to milk yield, Dr. Hutjens recommends use of

feed cost per hundredweight of milk. This calculation allows comparisons between groups of cows and farms. Income over feed cost is another key metric that helps estimate profitability by reflecting current feed prices and actual milk sales. Further, income over feed cost can be used to determine break-even prices, optimal dry off time and culling strategies. If additional resources result in additional milk, marginal milk response can be a very useful value. This calculation is the amount of additional milk sales one would expect adjusted for the increased cost of the additional input. With the current high feed prices, cost per unit nutrient needs to be considered. This allows a producer to compare the cost of purchased nutrients (energy, protein, amino acid, vitamin, or mineral) relative to other sources of the same nutrient. Caution in using this value is needed since most feedstuffs bring more than one nutrient when added to rations. The final metric that Dr. Hutjens mentions is feed efficiency. Feed efficiency is a common production measure for growing livestock (i.e. steers), but is less common in evaluating dairy production. Feed efficiency is simply the pounds of fat corrected milk produced per lb of dry matter consumed. Targets for feed efficiency (lb 3.5% FCM/lb DMI) are 1.5 or greater for most groups of cattle on the farm. Values lower than this can be an indication of a problem in that group. Factors to consider when evaluating low feed efficiency are estimating feed refusal weight, high days in milk, high somatic cell count, change in body condition, amount of exercise in group, rumen acidosis, protein level in the ration, use of feed additives, ration fiber level, and heat stress.

Summarized from Practical Approaches to Feed Efficiency and Applications on the Farm, presented at 2007 Penn State Dairy Cattle Nutrition Workshop, Grantville, PA

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