

Texas Dairy Matters

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Environmental Enrichment – Is Dairy Next?

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For years we've heard about environmental enrichment in poultry houses. Now environmental enrichment is being evaluated for both dairy cows and calves that are kept indoors throughout the year. Indoor housing has its benefits:

- Cows and calves are protected from predators
- Exposure to parasites is reduced
- Heat stress and cold stress can be managed
- Distance to feed can be minimized
- Wet muddy conditions are avoided

Despite the benefits of housing, there can also be some negative aspects, such as restricted movement, prolonged time on concrete, poor air quality, and increased social stressors. Recently researchers around the globe have begun to evaluate whether environmental enrichment can lead to improved performance, decreased stress, and enhanced behavior.

Raising calves in individual hutches to minimize disease transfer and prevent sucking behavior on pen mates has been widely adopted. Recently researchers have been evaluating pair housing as a possible alternative to individual housing. By housing the calves in pairs, socialization occurs while hopefully limiting disease transmission compared to calves housed in larger groups.



Some of the benefits reported from pair housing compared to individual housing include: increased time spent at feeders, more frequent visits to feeders, and earlier starter consumption from computerized feeders. In addition the pair raised calves had better social skills and could cope with stress better. There are some economic benefits as well in that pair housing requires less space. Further research is needed to determine how soon the animals should be paired and if health is compromised compared to individually raised calves.

A lot of research has been done on how changing groups can affect social dynamics, feeding time, lying time, milk production and grooming behavior. Ideally cows would stay with a group of peers throughout their life; however the reality is most are moved into different groups based on productive or reproductive parameters. In general, minimizing the number of moves and moving groups of animals rather than individuals are current recommendations.

Another area that has been evaluated is whether cow's need to isolate themselves at calving time. British Columbia researchers have shown that when given the choice cows prefer having a secluded area in which to calve. In addition, cows with some type of illness (temperature, mastitis, metritis, pneumonia, etc.) also seek out seclusion. Incorporating secluded areas into current housing facilities could improve the herdsman's ability to identify sick cows or cows nearing calving.

When on pasture, cows are frequently seen rubbing themselves on trees or other objects. In confinement facilities cows seem to rub their head, neck or body on metal gates, posts or water troughs. Another facility modification that is being incorporated into more dairy facilities is the installation of cow brushes. Not only do the brushes provide for scratching, they also result in cleaner cows.

Environmental enrichment of dairy cow housing systems is just beginning. Expect there to be more research evaluating how to improve both cow and heifer well-being in the future. And expect more consumer demand for environmental enrichment for dairy cattle.

References

Mandel, R., H.R. Whay, E. Klement, and C.J. Nicol. 2016. Invited review: Environmental enrichment of dairy cows and calves in indoor housing. *J. Dairy Sci.* 99:1695-1715.