ABSTRACT

In order to determine the most effective bedding selection that would result in decreased ammonia concentrations in an IVC rat cage over a two-week period. We conducted a study to determine:

1. The cost of different types of beddings and how it related to the frequency of cage changes and subsequent stress to animals.
2. The optimal volume of bedding required to produce the least exposure to ammonia concentrations.
3. The frequency of cage changes in each cage.
4. The air change rate measured at each interval was decreased ammonia concentrations and thus extended cage change periods in an IVC rat cage over a two-week period.

RESULTS

Results showed that using corncob bedding produced the lowest ammonia levels (2,000 cm³ 0.25 ± 0.50 ppm after 7 days and 0.25 ± 0.50 ppm at 14 days). However, rats housed on this type of bedding resulted in a significant cost savings compared to others. Elevated ammonia levels were measured in the corncob bedding. As the frequency of cage changes increased, so did the ammonia levels. The air flow rate was decreased from 0.25 ± 0.50 ppm at 7 days to 0.25 ± 0.50 ppm at 14 days. Ammonia levels could be kept within an acceptable range with 1,200 cm³, the focus should be on the ventilation rate as increased ventilation rate would allow for faster removal of ammonia from the cage.

CONCLUSION

Ammonia levels were within acceptable range with 1,200 cm³, the focus should be on the ventilation rate as increased ventilation rate would allow for faster removal of ammonia from the cage.

REFERENCES