

DUMPING SCORE TEST: CORN COB VS ASPEN BEDDING

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Background: Beddings are used and required within the microenvironment of laboratory animals. It is an environmental factor that provides warmth and enables the animals to keep dry within the cage. In addition, the welfare of the animals and any observational results is affected by bedding materials such as corncob, wood chips or paper products. The process of dumping and scraping dirty bedding is time consuming for cage processing staff especially if the bedding used is difficult to clean and remove. Hence, this study is to compare two types of bedding – Aspen and Corn Cob, in terms of which is easier for the cage processing staff to get rid of the dirty beddings upon dumping to improve the workflow.

Material

- 1285L 542cm² Individually-Ventilated Cages (IVC)
- Corn Cob Bedding (BIOCOD)
- Aspen Bedding (ALPROMIN)
- C-fold towels
- C57BL/6NInv mice



Fig 1: Aspen and Corn cob bedding

Method:

- ❖ The strain of mice used for this project is C57BL/6JInv. The animals used for the study were kept constant over a period of 7 weeks.
- ❖ Parameters were kept constant; nesting material, number and sex of animals, same strain and the amount of bedding dispensed . 600mL of autoclaved aspen and corn-cob bedding are dispensed into the IVC cages.
- ❖ 40 cages for each type of bedding –Aspen and Corn Cob were set up at Week 3. 10 mice were put into each cage which were scheduled for bedding to be changed every fortnight.
- ❖ The subjects are :

Aspen Bedding	Corn Cob
Week 5, 7, 9 – 40 cages	Week 5, 7, 9 – 40 cages
Data are collected for 7 weeks	

Table 1: Information on the data

- ❖ The dirty beddings were then dumped at the dumping station and were scored accordingly.

Score	Description
1	Bedding drop without scrape
2	Scrape once
3	Scrape more than once

Table 2: Scoring system



Figure 2: Corn-cob bedding

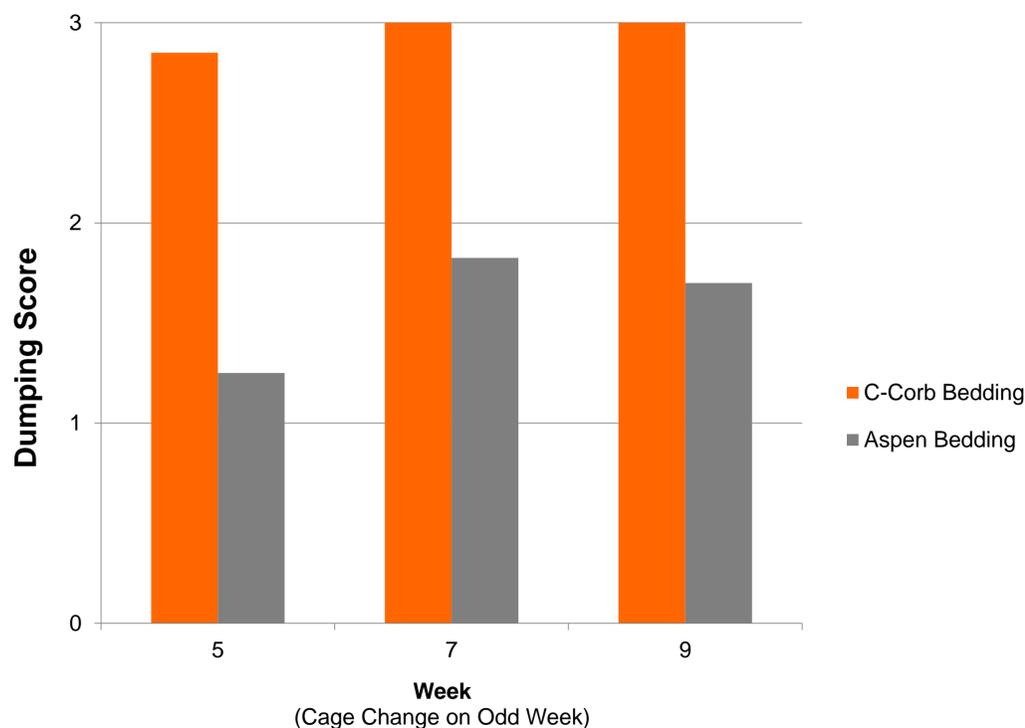
Soiled ends in corn-cob bedding



Figure 3: Aspen bedding

No scrape needed for Aspen bedding

Results & Discussion:



Based on the results, cages containing corn-cob bedding has a higher dumping score compared to cages containing aspen bedding throughout the whole project. The cage processing staff particularly needed more than one scrape to get rid of corn cob bedding. Whereas, cages that contained aspen bedding requires none or single scrape.

The results obtained shows that aspen bedding typically is a better choice for cage processing staff as it requires less effort and labor time spent upon dumping the dirty bedding – which is our objective for this study.

	Corn-Corb	Aspen
Week 5	2.85 ± 0.357	1.25 ± 0.433
Week 7	3 ± 0	1.825 ± 0.667
Week 9	3 ± 0	1.7 ± 0.6

Table 3: Dumping score results

Conclusion: From the above results, we can conclude that Corn-cob requires more than 1 scrape to get rid of the soiled bedding, regardless of sex and age group as they commonly has 2 soiled ends. Whereas, Aspen bedding requires lesser effort to get rid of the dirty beddings which improves the efficiency of the cage processing staff's workflow. Therefore, Aspen bedding proves to be a better choice of bedding to facilitate the cage washing process.

References:

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