In order to ameliorate the husbandry of laboratory mice, different environmental improvements, aiming to meet the behavioural needs of mice have been developed. As burrowing belongs to the behavioural repertoire of mice, a large amount of bedding could be considered as an improvement of the environment. Since very few studies have focused on the depths of bedding, the aim of the present study was to understand the preference of group-housed laboratory mice regarding three different bedding volumes.

1. Validation: A four-week validation test demonstrated that the implantation of two transponders per mice and a tube diameter of 30/24mm (outer/inner) provides the most reliable data (98% in accordance with video analysis).

2. Preference Test: Both strains showed highly significant preferences for the larger bedding volume (Fig. 2). C57BL/6 mice revealed a stronger preference for the deeper bedding than BALB/c mice (p=0.01), especially in combination B (0.5 vs. 6 litres) and C (1.5 vs. 6 litres). The preferences of both strains became particular obvious during the light phase, 6.00-18.00 CET (Fig. 3).

According to the present results, laboratory mice do prefer the cages containing deeper bedding, therefore it is more suitable to equip Type III cages with a bedding volume of 1.5 litres (or more) rather than 0.5 litres. This study indicates that it is recommendable to provide mice with a larger bedding volume, especially during experiments which need to exclude any further environmental improvement. Nevertheless, like any other environmental improvement, its influence on physiological parameters such as body weight, relative organ weights, haematological data should be examined in further studies.