INTRODUCTION & AIM
Nowadays environmental enrichment is an important issue in laboratory animal science not only because preference tests showed that animals prefer enriched environments to non-enriched and that a more complex environment effects the mice’ development and behavior beneficially but also due to the possible impact on experimental results. As preference tests only show a hierarchy of preferred items the more objective method ‘consumer demand theory’ deriving from economics is an appropriate means in order to get an insight into the animals’ needs. Here the animals have to ‘pay’ a certain price if they want to get access to a resource. For essential or ‘inelastic’ goods the slope of a linear regression is between 0 and 1. So far research using consumer demand theory has only been carried out with single housed animals. The aim of this study was to develop a testing method for group-housed mice according to ‘consumer demand theory’.

MATERIAL & METHODS
For two weeks same sex groups of four male or female BALB/c mice were kept in a Makrolon type III cage (equipped with food, water and wood shavings) and afterwards they were transferred into the experimental setup -the double cage- consisting of two Makrolon type III cages (C1 & C2) (each equipped with food, water and wood shavings) connected by a Perspex tube for another two weeks. Afterwards the consumer demand experiments were carried out using logarithmically increasing light intensities (100lx to 3200lx) as a negative reinforcer or the ‘price’, respectively. The resources for which the mice had to accept the increasing light are either water (experiment 1), wood shavings (experiment 2) or a mouse house (experiment 3). Several behavioral pattern were observed in C2 for 24h at each light intensity.

RESULTS
Most of the observed behavioral pattern were performed significantly less as the light intensities increased (Figure 4). Figure 5 shows that in experiment 3 the amount of time spent in C2 the course of 24h is only slightly influenced by increasing light.
A regression analysis reveals that the slopes of the curve for all behaviors of interest are between 0 and 1 (Figure 7). In addition to that with increasing light intensities the main activity of the mice shifts from the dark period in C1 towards the light period in C1 (Figure 8).

CONCLUSION
1. Light is a possible negative reinforcer because the performance of most of the behavioral pattern decreased whereas the amount of water taken in stays stable.
2. Water, wood shavings and the mouse house are essential goods for group-housed mice which is demonstrated by the slope of the linear regression.
3. There are gender differences regarding the use of the mouse house.
4. If the supply with a mouse house is not possible, enough wood shavings should be provided. Wood shavings are not only vital for sleeping and thermoregulation but also for the performance of all other behavioral pattern.
5. Different light intensities influence the performance of behavioral pattern differently.