

## LOCATION AND SOCIAL BEHAVIOUR OF YOUNG RABBIT BUCKS

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### ABSTRACT

Three 16 weeks old rabbit bucks were lodged in a set of three contiguous two-floor cages, projected to increase the floor surface and to improve the welfare of the animals. They had the opportunity of looking at each other or not, and this chance was considered. The rabbits were firstly introduced in the upper floor and their behaviour was video-recorded each 12 minutes for 13 days. The trial had four replications to a total of 12 subjects. Since it was observed an initial explorative activity performed mainly during the second day, but with peculiar behavioural differences among subjects, this aspect was later studied in a second trial, by continuous video-recording of 3 rabbits. After a few days, the rabbits chose to lay preferentially in the lower floor (80.7% of the time;  $P < 0.01$ ). The trend was already clear at the 3<sup>d</sup> day (lower floor 74.1%;  $P < 0.01$ ), while, during the second day, the explorative activity equalized the percentage of presences (50.9% lower floor vs 49.1% upper floor;  $P = n.s.$ ). When rabbits had the chance of looking at each other they did it mostly. On the 2<sup>nd</sup> day this behaviour was slightly reduced as an effect of the explorative activity. From the 4<sup>th</sup> day rabbits located in the external cages were looking toward the subject nearby in the central cage 76.2% of the observed occurrences ( $P < 0.01$ ). The general trends could be observed as a mean notwithstanding rabbits showed individually specific behaviours. The results of the second trial showed that rabbits have different latency periods, in a range of 20 to 47 hours, before beginning the explorative activity.

**Key words:** rabbit, behaviour, welfare.

### INTRODUCTION

Problems of rabbit welfare in relationship with intensive production have been every so often considered (FABRE, 1995; MARIONNET, 1996; VERGA and FERRANTE, 2002). In the frame of the welfare rules that must be established by the EC Committee it is expected that wider floors and higher rabbit cages will be requested and conditions permitting social pattern will be considered (PORFIRI, 2002; DAL BOSCO *et al.*, 2003).

A two-floor cage, projected and tested to improve floor surface and giving the animals the chance of jumping up and down and standing upright on their hindlegs (FINZI *et al.*, 1997; 1999), is fit to analyse such problems. The upper floor is wider than the platform proposed by STAUFFACHER (1992) and the goal is different, since the function of the platform is mainly

to permit the doe not to be deranged by the litter when it leaves the nest-box (MIRABITO, 2002; 2003).

A research was planned to test the explorative behaviour, the surface utilisation and the preference to look to conspecific, in order to bring a contribution to some of the above mentioned points.

## MATERIAL AND METHODS

Three 16 weeks old bucks were located in a set of three contiguous two-floor cages permitting them to look at each other (fig. 1). Feeders and drinkers were set on the lower floor (MARGARIT and FINZI, 2000). Water and food were available *ad libitum*. The experimental set was located in a closed room and a person entered only once a day at 9:00 a.m. to feed the animals. The light/dark rate was 13/11, according to the season. The rabbits were introduced in the upper floor and their behaviour was recorded for 13 days by a web-cam to analyse the preferences between the lower and the upper floor.

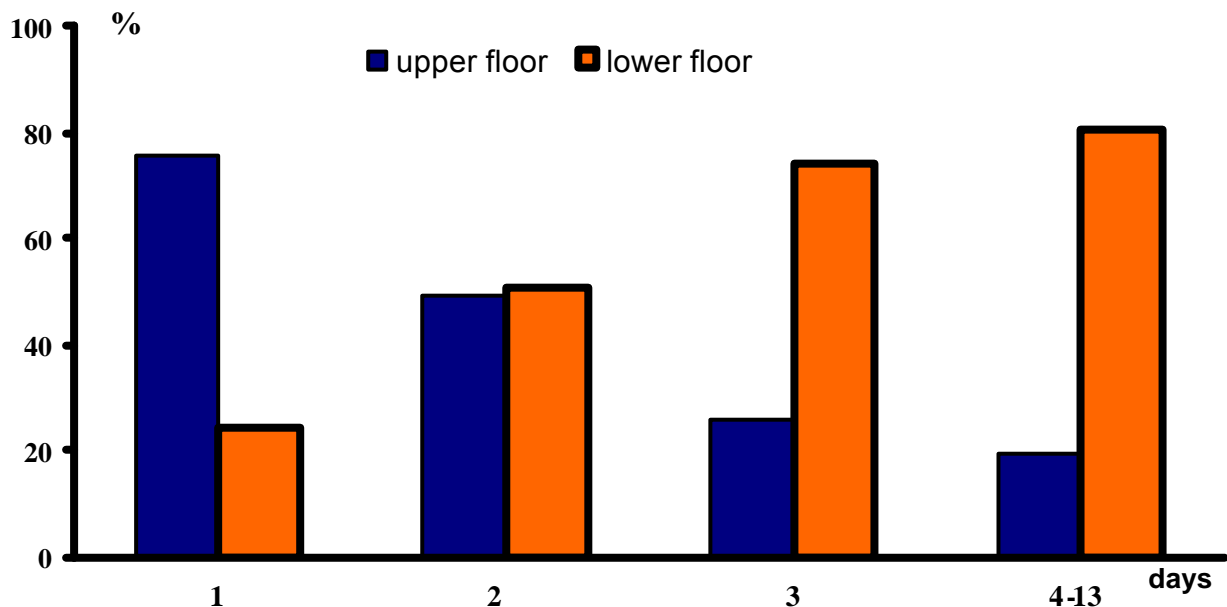
As a hint of social behaviour the tendency of the animals to look each other or not was checked, and the different opportunities of the central vs the side cages were considered. The video recording was timed each 12 minutes. The trial had four replication for a total of 12 subjects. Since it was observed an initial explorative activity performed mainly during the second day, but with peculiar behavioural differences among subjects, this aspect was later studied by continuous recording on 3 subjects until explorative activity began. Statistical analysis was performed according to SAS (1993).



**Figure 1:** Experimental set of two-floor cages. Rabbit A is attempting to jump on the upper floor.

## RESULTS AND DISCUSSION

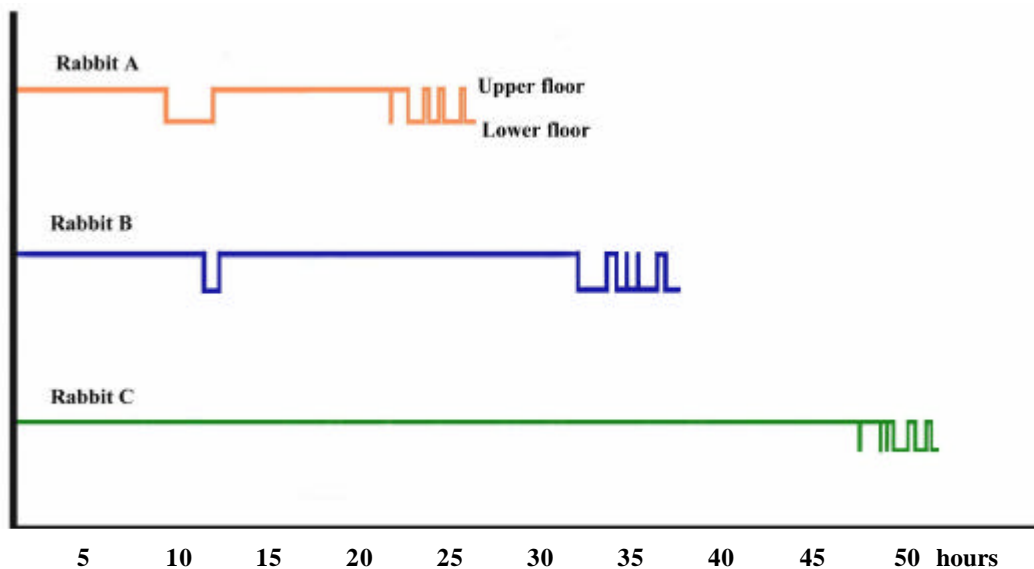
The rabbits remained in the upper floor 75.8% of the time ( $P < 0,05$ ), during the first day (figure 2). In the second day, in which most subjects perform their explorative activity, the time spent in the two floors equalized as a mean (49.1% and 50.9%, respectively in the upper and lower floor). From the third day the preference for the lower floor (74.1% of the time;  $P < 0,01$ ) become quite evident, and the final proportion was almost established (80.7% to 19.3% in the lower and upper floor respectively;  $P < 0.01$ ). If this behaviour is supposed depending on the fact that rabbits like to lie near to the place where feeders and drinkers are set, this result is in agreement with a previous trial (MARGARIT and FINZI, 2000) in which the preference was not marked, but, not to influence the choice, feeders and drinkers were set both in the upper and lower floor. When a platform was utilized to enrich the environment of the cage, it was utilized by does not to be deranged from the litter, but, in normal conditions, the animals preferred the standard floor 84-88% of the time according to MIRABITO (2002), in agreement with the present trial.



**Figure 2: Presence of the rabbits in the upper and lower floor during the experimental period.**

The rabbits were observed to jump up to and down from the upper floor during the initial explorative activity but then they lost interest in the upper floor remaining mostly to lay lazily in the lower one. During the observation period of 120 hours in continuous recording (second trial) and of 37440 single records (first trial) they were never observed to stand on the hindlegs utilizing the tall space (52 cm) giving access to the two floors. This may suggest that domestic rabbits, no longer menaced by predators, have lost the attitude to assume the specific standing alert position. The results show that standard cages look fit to satisfy sufficiently the behavioural needs of the rabbits and that the request of larger and/or higher cages are based on exigencies more hypothetical than real.

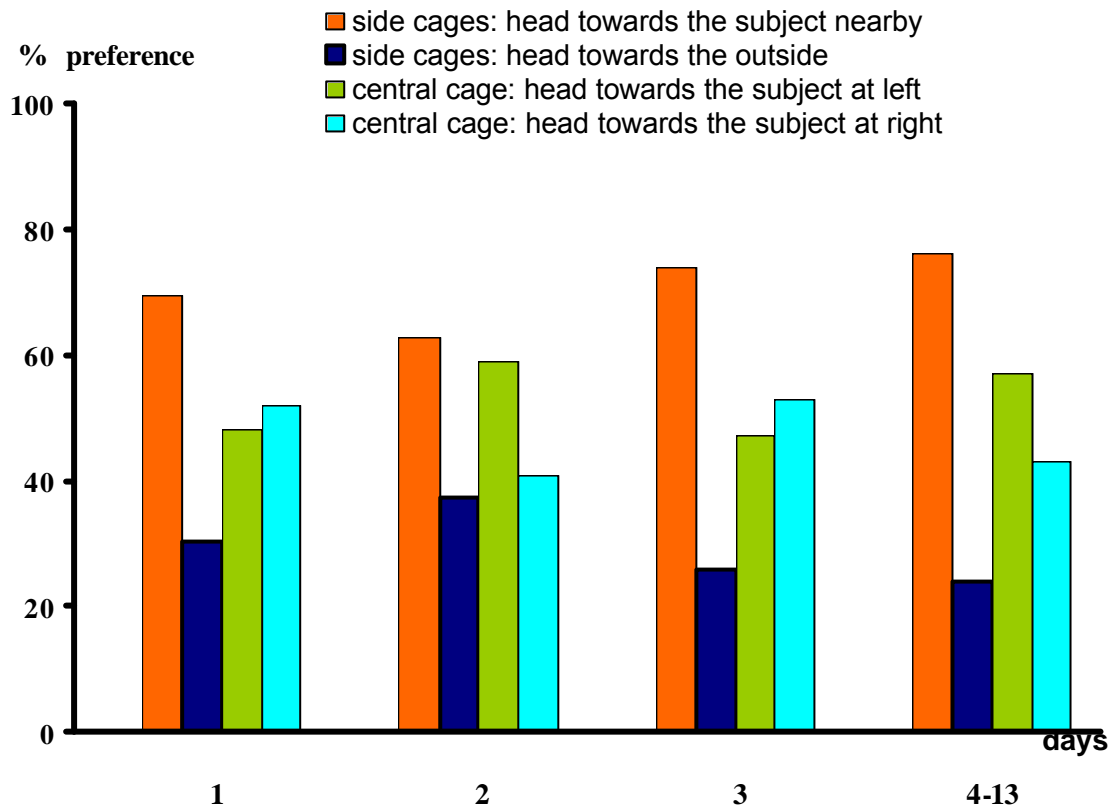
The reported data hide the perceptible individual behavioural differences noticed when single records were compared. In figure 3 is shown how different is the lag of time before each animal begins the explorative activity which will bring to the final standard behaviour. As can be seen the bucks A and B had a short visit to the lower floor after about 10 hours. The subject A began the true explorative activity only about after 20 h from its introduction in the cage; B had a lag of 10 hours more and C a lag of even 27 hours more (47 hours from the experiment starting). The mean time spent in the upper floor in the first day was, in this case, longer (90,9 %), than in the previous trial, mainly due to the uncommon behaviour of the C rabbit. Including this datum, the new mean rises to 88,1%, strongly confirming the MIRABITO's observations (2002). This makes still more clear that, even if the rabbits are introduced in the upper floor and stay there for a long time, at the end they show a clear preference for the lower floor where they lay mostly. As to say, they chose the part of the enriched cage corresponding to the industrial standard conditions



**Figure 3: Lag of time before the rabbits begin their explorative activity.**

Long periods of inactivity are typical of the rabbits stressed by cage changing (FINZI and VERITÀ, 1980; FINZI *et al.*, 1986), since, being territorial animals, they need time to get accustomed to a new environment, which is only apparently identical to the one from where they were moved off but, in reality, is not marked by their own smell yet. The quite different behavioural patterns pertain to individuality and have been constantly observed in previous researches (FINZI *et al.*, 1997; MARGARIT and FINZI, 2000).

When the orientation of the animal's head was analysed (figure 4) it was observed that the subjects located in the external cages were preferentially looking towards the nearby one ( $P < 0.01$ ), while the latter, located in the central cage, showed a lack of preference.



**Figure 4: Orientation the rabbits' head during the experimental period.**

The result was interpreted as indicating that rabbits like having some subject in the nearby (social behaviour) but such a preference had not specific traits, as shown by the rabbits located in the central cage. The observed conduct was established since the first day and tended to reinforce with the time (76.2% vs 23.8% from the fourth day;  $P < 0.01$ ). The conclusion is that the rabbit behaviour, with reference to social attitude, contrary to the delayed choosing of the preferred place, is manifested quite soon. Probably the presence of a conspecific has a reassuring effect on rabbits stressed by cage changing.

## CONCLUSIONS

Three points can be underlined as main results of the research:

- Rabbits do not seem to need a relevant activity and lay preferentially by the place where feeder and drinkers are set. This result is not supporting the idea that rabbits need a larger surface than standard industrial cages.
- Rabbits do not seem to need higher cages to be able to rise up on the hindlegs.
- Rabbits show their social attitude by looking mostly towards some other subject in the next cages, but without showing any specific preference.
- Individuality is an important trait of rabbit behaviour and this trait is worth to be specifically studied.

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