

EFFECT OF FREQUENT WEIGHING ON THE PERFORMANCE OF GROWING RABBITS

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ABSTRACT

The aim of the experiment was to study the effects of weighing frequency on the performance of growing rabbits. Rabbits were weaned at 21 (n=108) or at 35 days of age (n=108). Both groups were halved. One part of the rabbits was weighed weekly (frequently, W21 and W35 groups) and the others were weighed only at the beginning and at the end of the experiment (control, C21 and C35 groups). Feed intake and mortality were recorded weekly. Frequency of weighing had no influence on body weight, feed intake and feed conversion. The difference in the total mortality of frequently weighed and control rabbits was independent of the treatment. Experimental results showed that frequent weighing did not affect the growing performance of rabbits.

Key words: rabbits, weighing, body weight, feed intake, mortality.

INTRODUCTION

Under experimental conditions animals are caught, occasionally treated, and according to the aim of the study, they are weighed frequently or just occasionally. Consequently the question arises whether this disturbing has an influence on the production. Should this effect have any probably harmful effect on the production, the trueness and possible transposition to breeding conditions of experimental results may be broken.

In the past few years the relationship between human contact and fear reaction has been extensively studied (PONGRÁCZ and ALTBÄCKER, 1999; BILKÓ and ALTBÄCKER, 2000; PONGRÁCZ *et al.*, 2001). It was found that kits caught around the suckling event show lowered fear reaction against humans, they become more conformable. In theory the opposite of this condition may also occur: the frequent weighing of rabbits not used to humans may induce stress, leading to lower production. This would lead to a systematic bias in all the experiments where rabbits are frequently removed from their cages, investigated, treated or weighed.

The aim of this experiment was to compare the performance (growth and feed intake) and viability of rabbits in different groups according to weighing frequency.

MATERIAL AND METHODS

The experiment was carried out at the experimental rabbit farm of the University of Kaposvár, on Pannon White rabbits. Half of the rabbits was weaned at the age of 21 days (n = 108), while the other half was weaned at the age of 35 days (n = 108).

Rabbits were housed by three in cages of 300 x 400 mm. Rabbits were fed a commercial diet (DE: 10.3 MJ/kg, crude protein: 16,5%, crude fibre: 15,5%) *ad libitum*, while water was provided from nipple drinkers also *ad libitum*.

All animals were weighed at weaning (i.e. at the age of 21 or 35 days) and at the end of the experiment (70 days of age). In each group, half the animals were weighed weekly (weighed group) or not (control group). Feed intake and mortality were recorded weekly.

Experimental data of each weaned group were evaluated separately by one-way analysis of variance (live weight, feed intake and feed conversion), using experimental group (W vs C group) as fixed effects.

The following model was used:

$$Y_{ij} = \mu + A_i + e_{ij}$$

where: μ = population mean, A_i = effect of weighing (i=1-2), e_{ij} = error,

Mortality was analysed using χ^2 method. Analyses were performed using the software SPSS 10. Between group differences were analysed by the Duncan test.

RESULTS AND DISCUSSION

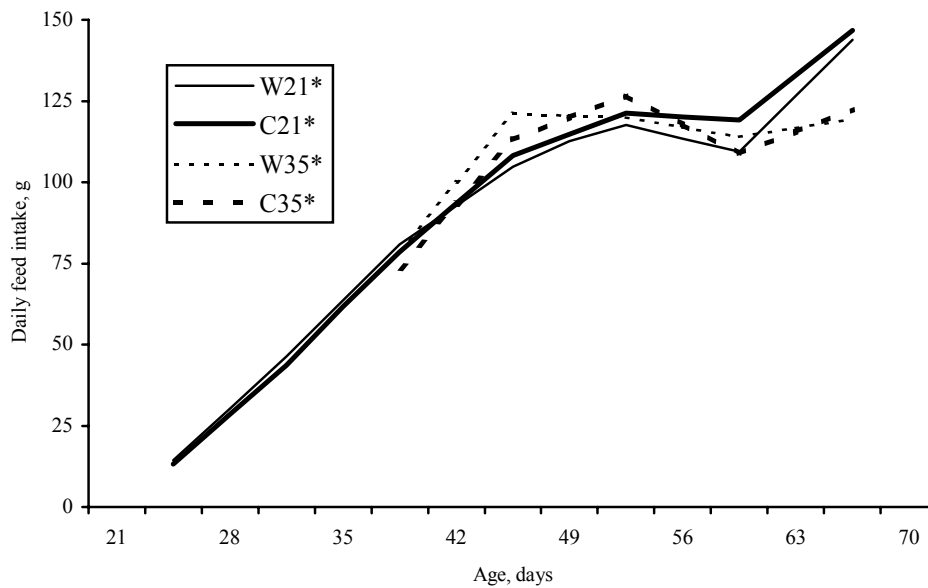
Results were summarized in Table 1. The body weight gain from weaning till 70 days of age, the live weight at the age of 70 days, the feed intake and feed conversion were similar in the weekly weighed group and in the control group.

Table 1 Effect of frequent weighing on the performance of rabbits, weaned at 21 or 35 days of age.

	Weighed	Control	
	Mean ± se	Mean ± se	Prob.
Weaned at 21 days of age			
Body weight, g			
at 21 days	453 ± 6.2	445 ± 7.1	NS
at 70 days	2212 ± 40	2222 ± 52	NS
Weight gain, g/day			
between 21-70 days	35.9 ± 0.8	36.2 ± 1.0	NS
Feed intake, g/day			
between 21-70 days	88.1 ± 6.1	90.1 ± 10.6	NS
Feed conversion, g/g			
between 21-70 days	2.48 ± 0.16	2.51 ± 0.3	NS
Mortality, %			
between 21-70 days	27.8	37.0	NS
Weaned at 35 days of age			
Body weight, g			
at 35 days	941 ± 11	938 ± 15	NS
at 70 days	2259 ± 20	2259 ± 34	NS
Weight gain, g/day			
between 35-70 days	37.7 ± 0.5	37.8 ± 0.1	NS
Feed intake, g/day			
between 35-70 days	110.8 ± 3.0	108.9 ± 3.0	NS
Feed conversion, g/g			
between 35-70 days	2.93 ± 0.05	2.88 ± 0.04	NS
Mortality, %			
between 35-70 days	16.7	1.9	**

** Differences are significant at P<0,01 level

Feed intake was reported in Figure 1 for each group. Feed intake was similar in the frequently weighed and in the control group. The feed intake of rabbits weaned at the age of 21 days was very low from weaning to 28th days of age. This could be due to the position of the nipple drinkers: they were a little too far from the vertical wall of the cage, therefore, the drinking was slightly harder for the rabbits.



*W21 and W35: frequently weighed, weaned at 21 or 35 days of age
 *C21 and C35: control group, weaned at 21 or 35 days of age

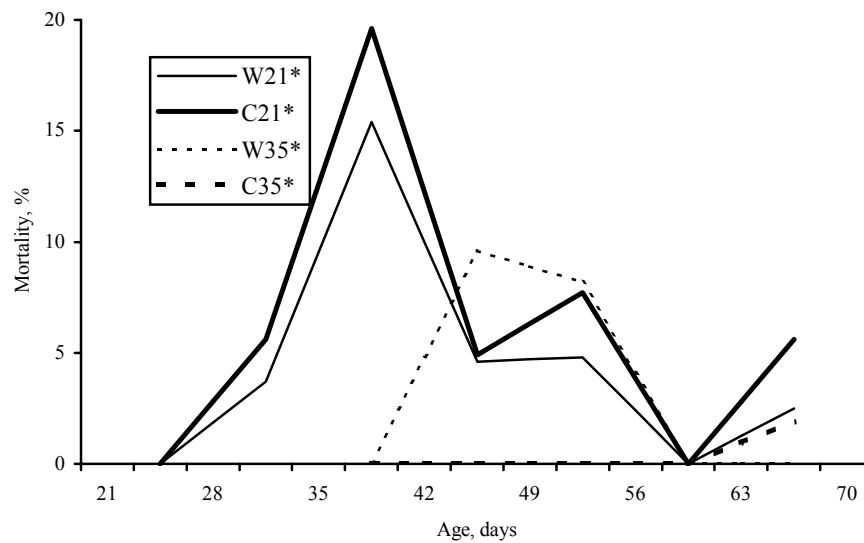
Figure 1. Effect of frequent weighing on weekly feed intake of rabbits, weaned at 21 or 35 days of age.

In spite of the fact that the difference in the mortality between W21 and C21 groups was not significant, both the mean mortality (Table 1) and the mortality curve (Figure 2) tended to be higher in the control group. This is the opposite of that found between W35 and C35 groups. However, the mortality of rabbits was significantly lower in the C35 than W35 group (Table 1), the total mortality of frequently weighed and control rabbits did not differ (22.3 vs. 19.4%, respectively; NS;). Thus, it can be supposed that the differences found in the mortality were not induced by the frequent weighing.

RAFAY (1997) removed the rabbits three times a day for the investigation of the effects of frequent treatment. Despite the slightly higher feed intake on some weeks the treatment had no influence on the growth of the rabbits.

CONCLUSIONS

According to our results it seems that the frequent weighing of experimental rabbits does not reduce their production. Therefore, experimental data could be accepted without critics and they can be a proper source to draw practical conclusions.



*W21, W35, C21 and C35: see Figure 1

Figure 2. Effect of frequent weighing on the mortality of rabbits, weaned at 21 or 35 days of age.

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