

The effect of genotype on the behaviour of free range chickens

M. LICHOVNIKOVA, S. NEDOMOVA and A. HLASENSKA

Mendel University of Agriculture and Forestry in Brno, Zemedelska 1, 61300 Brno, Czech Republic.

E-mail: lichov@mendelu.cz

The purpose of this experiment was to investigate the behaviour of fast and slow growing chickens from hatch to seven weeks of age, when the birds had access to the outdoor area. Fifty 1-day-old male chicks of a laying hybrid ISABROWN (IB) and fifty 1-day-old broiler chicks of ROSS 308 (RS) were kept in two pens in the same building. In each group ten birds were marked on their back with a coloured spray. From three weeks of age the birds had access to the outdoor area in a space of 325 square metres for each group. From the age of one to seven weeks old, one day a week the marked birds were observed from 8:00 to 18:00. Every ten minutes the behaviour of the ten marked birds was noted in each group. Behaviours recorded were as follows: eating, drinking, movement, resting sitting, resting standing, dust bathing, scratching, comfort behaviour and aggression. Each day 600 observations were made in each group. The occurrence of each behaviour during each day was calculated as a percentage of the recorded information of each particular behaviour from 600 (total number of observations = 100%). At 49 and 90 days old ten birds were slaughtered in each group and the strength of the tibia and the femur bones was measured. Behavioural data were analysed by the test of hypothesis for two samples present in independent binomial experiments. The quality of the bones was analysed by the nonparametric Mann-Whitney U-Test using the software package Unistat 5.1. The average time that the birds spent eating during the 7 week period was almost the same in IB and RS. On average, the IB birds spent a significantly higher ($P < 0.05$) amount of time moving around than RS. However, until the fifth week of age there was no significant difference between these two genotypes in movement behaviour. In IB, movement was the more frequent behaviour. The resting sitting down was the most frequent behaviour in RS and after three weeks of age they spent significantly more ($P < 0.05$) time with this behaviour than IB. Dust bathing was minimal in both genotypes. On average, the IB birds spent significantly more ($P < 0.05$) time scratching than did the RS birds. No aggression or pecking was observed in the IB males during the whole test period, and in the RS birds these two kinds of behaviour were also minimal. The strength of the femur was significantly higher in RS in comparison with IB at both ages (49d - $P < 0.001$, 90d - $P < 0.05$). The strength of tibia was also significantly higher in RS ($P < 0.001$) at both ages. Although the chickens had enough outdoor area to move around in, the fast growing broilers did not use it.

Keywords: broilers, laying males, movement, resting sitting