

## **EFFECT OF QUANTITATIVE FEED RESTRICTION ON THE PRODUCTION RESULTS AND SLAUGHTER QUALITY OF BROILER CHICKENS**

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Healthy eating is today a key concern for consumers, as reflected in a growing demand for low-fat meat. On the other hand, the selection of meat-type chickens towards a fast growth rate has resulted in increased carcass fatness. One of the factors that may contribute to reducing the fat content of poultry carcasses is quantitative feed restriction. The aim of the present study was to compare the production results and slaughter quality of broiler chickens fed *ad libitum* and a quantitatively restricted ration at the early stage of rearing.

Two experiments were conducted, in which experimental materials comprised Ross 508 broilers. The first experiment involved different levels of feed restriction (5% and 20%), introduced at different stages of rearing and lasting for a different period of time. In the second experiment both the level (25%) and duration (10 days) of feed restriction were identical in all experimental groups, but birds were subjected to restricted feeding at different stages of rearing.

In both experiments, at the completion of the rearing period, i.e. at 6 weeks of age, 14 males and 14 females were selected randomly of each feeding group for slaughter and post-slaughter analysis. Production results were determined based on: 1. body weights and daily gains of broilers, 2. feed intake as well as protein and metabolizable energy utilization per kg of the analyzed product, 3. European Broiler Index (EBI), 4. slaughter quality of broilers.

A relatively severe (25%), but short-term (10 days) feed restriction, introduced at an early age (from day 6 to 11), had no significant effect on the final body weights of broilers. However, 20% and 5% feed restriction, continued for 14 and 28 days respectively, caused a significant decrease in the final body weights of birds, compared to those fed *ad libitum*. The level and duration of quantitative feed restriction applied in the study had no significant effect on feed consumption per kg of carcass weight, meat weight or the weight of the edible parts of a carcass. A ration restricted by 25% between 6 and 15 days of age caused a significant reduction in feed intake per kg of body weight of broilers.

A high level (25%) of feed restriction introduced at different stages of rearing had a negative impact on carcass meatiness, in comparison with *ad libitum* feeding. Less severe (20%) feed restriction, applied during the first two weeks of the experiment, had no influence on carcass meatiness and allowed to reduce carcass fatness.

The carcasses of males, compared to the carcasses of females, contained more bones and less skin with subcutaneous and intermuscular fat. In experiment 1 males were characterized by higher carcass meatiness than females, while in experiment 2 there were no differences between sexes with respect to carcass lean content.