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THE EFFECTS OF PROTEASE AND SEX ON TISSUE COMPOSITION IN MAJOR PRIMAL CUTS OF BROILERS

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SUMMARY

This study aimed to assess the effects of different levels of protease enzymes in broiler diets and sex on tissue composition (skin, bone and muscle) in breast, drumsticks and thighs as the most valuable parts of the carcass.
A total of 300 one-day-old, mixed-sex broiler chickens (Cobb 500) were randomly divided into 3 dietary treatments. The diets contained 3 levels of protease supplementation (C group: standard diet without Ronozyme ProAct; E-I group: diet containing 200 mg/kg Ronozyme ProAct and 4% less crude protein than the standard diet and; E-II group: diet containing 300 mg/kg Ronozyme ProAct and 6% less crude protein than the standard diet). All diets were corn-soybean based. Feed and water were provided *ad libitum* throughout the experimental period of 49 days.
The results showed that the dietary treatments had no significant effect on the tissue composition of drumsticks, thighs, and breast ($P>0.05$), except for the breast muscle weight of female chickens, where significance was manifested between groups E-I and E-II, and the drumstick bone proportion of males between groups C and E-2 ($P<0.05$).
In all three experimental groups, male chickens had higher weight of skin, muscle and bone in breast, drumsticks and thighs compared to female chickens, and the differences were not significant only in weight of skin in drumsticks and thighs ($P>0.05$). Females had a higher yield of muscle tissue in breast and drumsticks, a higher proportion of skin in drumsticks and thighs, as well as a lower proportion of bone in drumsticks and thighs compared with males ($P<0.05$).
In these studies, the biggest differences were manifested under the influence of the sex of the chickens, while the applied diets containing 3 levels of protease supplementation had a very small effect on tissue composition (skin, bone and muscle) in breast, drumsticks and thighs.

Keywords: broilers, protease, sex, tissue composition.