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WPŁYW POSTACI FIZYCZNEJ ZIARNA OWSA NA EFEKTY PRODUKCYJNE, STRAWNOŚĆ I JAKOŚĆ TUSZEK GĘSI BIAŁYCH KOŁUDZKICH ®

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SUMMARY

Key words: White Kołuda goose, oats (whole grain, crushed, ground), slaughter analysis, fatty acids profile, digestibility of protein and amino acids.

The aim of the study was to investigate the effect of physical form of oats grain (whole grain, crushed, ground) on production results of fattening, feed efficiency, carcasses quality, fatty acids profile, apparent digestibility of protein and amino acids in slaughter White Kołuda® geese, strain W-33. 120 (60 ♂♂+60 ♀♀) chicks were randomly chosen for the experiment. Until completion of 14 weeks of life geese were fed equally, giving concentrate feed KB-1, -2, i -3 in amount of 250-300 g/per goose/per day and green forage from grasses given *ad libitum.* After completion of 14 weeks of life geese were divided into three feeding groups (20♂♂ + 20♀♀ in each group), whereat five birds of each sex were excluded from each group for research to determine coefficients of apparent intestinal digestibility of protein and amino acids. Thus three experimental groups of geese (in each group 15♂♂ and 15 ♀♀) were formed in Experiment 1 and three experimental groups (in each group 5♂♂ and 5♀♀) in Experiment 2. In period between 15th and 17th week of life, a total of 21 days geese were fed only grain of hulled oats variety Rajtar, whereat group I received whole grain, group II crushed grain and group III ground grain. In Experiment 1, after the end of fattening, from each of three experimental groups 5 males and 5 females were allocated for slaughter analysis, chemical research of content of nutrients in breast muscle and leg muscles, content of cholesterol in muscles and abdominal fat and also to determine the profile of fatty acids. In additional experiment the flow time of content through the digestive tract of geese depending on the physical form of oats grain was investigated.

The highest body weight, highest body weight gains from 15th to 17th week of life, the best feed efficiency and slaughter efficiency were obtained in geese fed whole grain of oats. Feeding geese with ground grain of oats in comparison to feeding geese with crushed and whole grain of oats significantly improved the quality of carcasses in consideration of the highest protein content and the lowest cholesterol content in breast muscle and leg muscles in geese fed ground grain of oats. The physical form of oats did not significantly impact on the fatty acid profile of the breasts muscles and legs muscles, while significantly differentiated their content in abdominal fat of geese. Significantly higher protein and amino acids digestibility was found in geese eating ground oats and thereat highly significant interaction between physical form of oats and sex was noted. Whole grain of oats moved the longest

(130 minutes), crushed grain moved shorter (75 minutes) and ground grain moved the shortest (55 minutes) through the digestive tract.

Males had a higher body weight, higher content of muscle tissue and lower content of fat tissue in comparison with females ($P \leq 0,01$). There were no significantly differences between both sexes of geese in slaughter yield and content of abdominal fat. There was also no influence of experimental factors on chemical composition of breast muscle, whereas leg muscles of males contained more protein ($P \leq 0,01$) more ash ($P \leq 0.05$) and less fat and dry matter ($P \leq 0.05$) than in females. The content of cholesterol was higher in breast muscle of males ($P \leq 0,01$). Profiles of groups of fatty acids in breast muscle and muscles of leg did not differ significantly in both sexes except higher content of PUFA-3 in breast muscle, more favourable PUFA6/3 ratio in breast muscle and in abdominal fat ($P \leq 0,01$) as well as higher content of PUFA-3 in abdominal fat ($P \leq 0.05$) in females. Coefficients of apparent intestinal digestibility of protein and amino acids were higher in females in comparison with males ($P \leq 0,01$).

In summary, it was stated that fattening of geese fed with whole grain of oats gives the best production results, whereas feeding geese with ground grain improves the quality of their carcasses in consideration of the highest protein content and the lowest cholesterol content in muscles.