DIETARY EFFECTS ON MUSCLE FATTY ACIDS COMPOSITION IN GROWING TURKEYS

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Summary. The influence of diet with increased amount of peas on muscle fatty acids composition in growing turkeys was investigated experimentally. Sixty turkeys were divided into 2 control (Groups 1 and 2, male and female) and 3 experimental (Groups 3-5, male and female) groups of twelve birds in each. The experiment lasted for 20 weeks. Controls in Groups 1 and 2 were fed soya feed diet. In Group 3 from 0 to 4 weeks of age soybean meal diet was substituted with 10 % of peas, 5-8 weeks with 15 % and 9-12 weeks with 20 % of peas. In Group 4 from 0 to 4 weeks of age 15 % of soybean meal was replaced by peas, 5-8 weeks of age – 20 % and 9-12 weeks of age – 25 % of peas, respectively. In Group 5, 0-4 weeks turkeys were fed with 20 % of peas, 5-8 weeks of age with 25 %, and 9-12 weeks of age with 30 % of peas. In all experimental groups from 13 to 20 weeks age turkeys had diet supplemented with 40 % of peas without soya feed.

The results of this experiment demonstrated correlation between fatty acids composition in turkey meat and dietary composition. The amount of Ω–6 linolenic fatty acid and arachidonic fatty acid in the pectoral muscles of male in experimental groups was higher (1.37 – 4.76 %) compared to female on experimental diets (1.00 – 3.67 %). The amount of arachidonic fatty acid in femoral muscles of male turkey was lower (0.13 – 0.32 %) compared to controls (Groups 1 and 2). The amount of ω–3 linolenic fatty acid in male femoral muscles was higher compared with male turkey (Groups 1 and 2) on soy meal (0.15 – 1.16 %). In addition, the level of ω–3 docosahexaenoic acid in Groups 3-5 in male turkey femoral muscles was lower (0.12 %) and in female birds femoral muscles and shins muscles higher (0.66 – 0.24 %) compared to male and female in control groups (Groups 1 and 2).

Keywords: peas, fatty acids, poultry, feed, turkey.