THE EFFECT OF DIET WITH AMARANTH (AMARANTHUS CRUENTUS) SEEDS ON JAPANESE QUAIL (COTURNIX COTURNIX JAPONICA) PERFORMANCE, SOMATIC DEVELOPMENT, HATCHING RESULTS AND SELECTED BLOOD BIOCHEMICAL PARAMETERS

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Abstract. The aim of this study was to determine whether the inclusion of amaranth seeds in diet for quails would favourably affect their performance, health and reproductive indices. Research material included Japanese quails divided into three groups on the 42nd day of their life, 36 females and 12 males each. Compound feed for experimental groups II and III was supplemented with 0, 4 and 7 % amaranth seeds, respectively. Group I (control) received standard feed. During the experiment, lasting to week 40 of quail life, feed consumption and egg number and weight, as well as deaths and culling, were recorded on a daily basis. Egg hatching was performed on week 26, 32 and 38 of quail life. Egg quality was evaluated at the end of the experiment, determining their basic morphological composition. In the blood collected during slaughter, selected biochemical parameters were determined (glucose, triglycerides, total cholesterol and its low density level (LDL) and high density level (HDL) fractions, total protein, albumin, alanine amino transferase (ALAT) and aspartate amninotransferase (ASPAT)). Eighteen birds of each group were also evaluated in terms of their somatic development. Quail nutrition with a diet containing amaranth seeds improved egg fertilisation and chick hatchability. Higher percentage of the experimental component (7 %) induced a decrease in egg laying production. No changes in egg weight and morphological composition were found, except the yolk percentage which was significantly higher in the quail group receiving a 4 % addition of amaranth seeds in diet. The feeding with experimental diet did not have any effect on the growth, development and morphology of quail internal organs. Increased quantity of this component in compound feed, to 7 %, induced an increase in albumin, triglyceride and LDL cholesterol concentrations, decreasing at the same time the level of liver enzymes in blood serum.

Keywords: quail, amaranth, hatching results, somatic development, blood biochemistry