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Effects of Cellular Insulin Receptor Stimulators with Alkaline Water on Performance, Plasma Cholesterol, Glucose, Triglyceride Levels and Hatchability in Breeding Japanese Quail

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Abstract : Aim of this study is to determine the effects of cellular insulin receptor stimulators on performance, plasma glucose, high density lipoprotein (HDL), low density lipoprotein (LDL), total cholesterol, triglyceride, triiodothyronine (T3) and thyroxine (T4) hormone levels, and incubation features in the breeding Japanese quails (Coturnix japonica). In the study, a total of 84 breeding quails was used, 6 weeks’ age, 24 are male and 60, female. Rations used in experiment are 2900 kcal/kg metabolic energy and 20% crude protein. Water pH is calibrated to 7.45. Ration and water were administered ad-libitum to the animals. As metformin source, metformin-HCl was used and as chrome resource, chromium picolinate was used. Trial groups were formed as control group (basal ration), metformin group (basal ration, added metformin at the level of feed of 20 mg/kg), and chromium picolinate (basal ration, added feed of 1500 ppb Cr) group. When regarded to the results of performance at the end of experiment, it is seen that live weight gain, feed consumption, egg weight, feed conversion ratio (Feed consumption/ egg weight), and egg production were affected at the significant level (p < 0.05). When the results are evaluated in terms of incubation features, hatchability and hatchability of fertile egg ratio were not affected from the treatments. Fertility ratio was significantly affected by metformin and chromium picolinate treatments and fertility rose at the significant level compared to control group (p < 0.05). According to results of experiment, plasma glucose level was not affected by metformin and chromium picolinate treatments. Plasma, total cholesterol, HDL, LDL, and triglyceride levels were significantly affected from insulin receptor stimulators added to ration (p < 0.05). Hormone level of Plasma T3 and T4 were also affected at the significant level from insulin receptor stimulators added to ration (p < 0.05).

Keywords : chromium picolinate, cholesterol, hormone, metformin, quail
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