

Research Article

SERUM BIOCHEMICAL PROFILE OF JAPANESE QUAILS (COTURNIX COTURNIX JAPONICA)

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ABSTRACT

The serum biochemical profile of the Japanese quail was estimated the parameters which were evaluated include serum glucose, cholesterol, total protein, albumin, globulin, uric acid, calcium, potassium, magnesium and chloride. The biochemical profile showed changes in the level with age of the bird .The glucose content of the birds decreased with age while the other parameters like cholesterol, total protein, albumin, globulin, uric acid calcium etc. increased with age.

Key Words: Japanese Quail, Serum Biochemistry

INTRODUCTION

Japanese quail(*Coturnix coturnix japonica*) farming is coming up as a diversification of poultry farming . Quails possess an excellent disease resistance quality than those of chickens and have been chosen for its economical viability in farming (Deka and Borah, 2008). The blood biochemical analysis is a valuable tool for evaluating the health of animal and helps both in diagnosis and clinical monitoring of disease (Karesh *et al.*, 1997). Its evaluation indicates the extent of damage in various vital organs and status of the disease. Serum biochemical profiling has been used in several species of domestic livestock to monitor herd health and to detect subclinical disease. The present study was undertaken to evaluate the serum biochemical profile of Japanese quails at different stages of growth.

MATERIALS AND METHODS

Serum samples were collected from the broiler breeding stock of a commercial farm near Karur, Tamil Nadu .The birds were slaughtered for blood collection by severing the jugular vein. The blood samples for biochemical analysis were collected in sterile tubes without any anticoagulant. The blood samples for biochemical analysis were allowed to clot and serum was separated within 2 h of collection. The biochemical profile of the samples was determined using an UV-Visible Spectrophotometer The profile consisted of glucose, cholesterol, total protein, albumin, uric acid (UA), magnesium (Mg), potassium (K) and chloride (Cl). Glucose and cholesterol were estimated by enzymatic methods. The total protein and albumin levels were determined with biuret and bromocresol green reagents respectively. The readymade kits from Span diagnostics were used for the analysis.

RESULTS AND DISCUSSION

Table 1: The result of biochemical estimation

Glucose (mg/dL)	450±21.04
Total cholesterol (mg/dL)	105±4.45
Total proteins (g/dL)	3.75±0.2
Albumin (g/dL)	1.29±0.012
Globulins(g/dL)	2.46±0. 0.015
Uric acid (mg/dL)	8.31±0.27
Calcium (mmol/L)	8.60±0.30
Phosphorus (mmol/L)	2.75±0.48

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The serum glucose level was (450 ± 21.04 mg/dl) and the content decreased with age. This level of blood glucose is due to the presence of more amount of glucagon secreting alpha cells in Islets of Langerhans. El-Ghalid (2009) reported that such a higher level of blood glucose may be due to more of gluconeogenic hormones. The decreasing trends of glucose level was accompanied by increased liver glycogen indicating a stimulated pancreatic activity which comes in agreement with the findings of Schulz (1940) who had reported that in pigeons, the pancreatic islets of Langerhans increased in size and number during the laying period of the female (Hassan, 2010). The serum total cholesterol content was 1105.5 ± 4.45 mg/dl and the present finding is in agreement with the findings of Hassan (2010). The total protein content in the serum was 3.75 ± 0.2 g/dl and the amount of albumin observed was 1.29 ± 0.12 g/dl. The present investigation is in agreement with the findings of Hassan (2010). The increase in total protein and albumin might be due to estrogen secretion at the onset of egg production (Coenen *et al.*, 1994). The serum calcium level in the present investigation is in agreement with the observation made by Bahie El-Deen *et al.*, (2009) who suggested that the calcium level might be due to increased secretion of steroid hormones.

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