The lung in most of vertebrates is the largest and lightest organ in the body cavity which greatly affect an organism’s shape, density, and its distribution of mass. But lungs are relatively too small in birds. Gross and micro-anatomical and morphometrical studies have been reported in lungs of guinea fowl (Suthakar et al., 2011a, b). The present study was undertaken to study the comparative gross morphology of the lungs of Aseel and Vanaraja breeds of poultry.

MATERIALS AND METHODS

The experiment was conducted on 28 apparently healthy birds belonging to 2 different age groups of Vanaraja and Aseel breeds of poultry irrespective of sex. Based on their age, the birds were divided into grower and adult. Both the groups had 14 birds, 7 birds from each breed. After taking the body weight, birds of specified age group were sacrificed by cutting the jugular vein and common carotid artery. Lungs were collected and immediately weights were taken by using electronic monopan balance whereas, volume was taken with the help of water displacement technique. The width, length and thickness of the lungs were taken with the help of Vernier caliper.

The data were statistically analyzed by using analysis of independent mean ‘t’ test as per Snedecor and Cochran (1994).

RESULTS AND DISCUSSION

The lungs were relatively very small, bright red and soft to touch as described by Ibe et al. (2008). They were nearly rectangular and flattened latero-ventrally. Lungs of Aseel were roughly triangular in shape (Fig. 1). Lungs were deeply indented by 2-6 thoracic vertebrae in the cranio-dorsal part. Impressions on the upper 2/3rd of the dorsal surface of lungs of ribs were seen. The depth of the impression increased from 2nd to 4th rib. Impression of the 4th rib was deepest in Vanaraja (Fig. 2), while impression of 5th rib was deepest in Aseel and then the depth decreased from 5th to 6th rib. Impression of 6th ribs was faint and extended up to middle part of caudal borders in both the lungs as reported earlier (McLelland, 1990; Cevik-Demirkan et al., 2006). The body weight of the Vanaraja was significantly higher than that of Aseel in both the groups. The weight and volume of the lungs of adult birds were significantly higher in Vanaraja. Weight with mean value of 9.49±0.10 gm and 9.65±0.14 gm for right and left lungs, respectively was significantly higher in Vanaraja than that of Aseel with mean value of 6.13±0.33 gm and 6.20±0.29 gm for right and left lungs, respectively. The volume with mean value of 13.43±0.34 cc and 13.77±0.37 cc for right and left lungs, respectively was significantly higher in Vanaraja than that of Aseel with mean value of 8.67±0.51cc and 8.91±0.48 cc for right and left lungs, respectively. The weight and volume of right lung was more than left lung in both the breeds (Table 1) as reported earlier (Maina and Nathaniel, 2001). Percentage contribution to the body weight and weight specific volume of lungs were significantly higher in Aseel with mean value of 0.85% and 0.99 VL/W (Group I) and 0.84% and 1.19 VL/W (Group II) to that of 0.66% and 0.72 VL/W (Group I) and...
0.58% and 0.82 VL/W (Group II) in Vanaraja. These findings indicated that lung size of jungle birds or fighting birds was larger than that of intensively or semi intensively domesticated birds. This may be attributed to the high oxygen demand during fighting (Table 1).

At grower stage, the length of both lungs was higher in Aseel than Vanaraja but it was not significant. Thickness of both the lungs was highly significant in Vanaraja grower than Aseel. At adult stage the length and width of both lungs in Vanaraja were significantly higher than that of Aseel. There were no significant differences observed in thickness of lungs for both the lungs.

**REFERENCES**


