Application Of Ultrasonography As The Potential Alternative Method In Avian Thymus Morphometry Using Broiler Chicken (*Gallus domesticus*) As A Model

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ABSTRACT

The objective of this research were to find an alternative method of avian thymus morphometry usinh the method of ultrasonography and to investigate the correlation between avian thymus measurements (sagittal area, transverse diameter, and thymic index) with age. The total sample used in this study were 42 male broiler chicken which were divided into two big groups with different method of morphometry, ultrasonography and conventional. Each big groups were then divided into three more groups according the age including one month, two months, and three months. *Multivariate Repeated Measures Test* was used to compare the difference between ultrasonography and conventional method. *ANOVA* was used to compare the difference between each group of age.

The result of *Multivariate Repeated Measures Test* showed that there were no significant difference between the usage of ultrasonography and conventional method with $p>0.05$. The result of *ANOVA* test showed that there were a highly significant result between each group of age in the measurements of broiler chicken thymus. Both method showed that the thymus had the biggest size during the first month and began regressing during the second month and regressed further in the third month. The research showed that ultrasosonography can be used as an alternative method in avian thymus morphometry and it also showed that avian thymus measurements are correlated to age.

Keywords : Age, Aves, Growth, Involution, Morphometry, Thymus, Ultrasonography