

ABSTRACT

Fiya Auliya Lestari, 24020121130060. Microanatomical Structure and Spleen Organ Weight of Male Peking Ducks Following Dietary Supplementation of *Spirulina platensis* Powder. Under the supervision of Sunarno and Rasyidah Fauzia Ahmar.

Peking ducks (*Anas platyrhynchos domestica*) are meat-producing poultry with high productivity, making immune system health essential to support their overall performance. One strategy to enhance immunity is the inclusion of natural ingredients such as spirulina powder in the diet. *Spirulina* is a microalga rich in nutrients and bioactive compounds, including flavonoids, saponins, tannins, alkaloids, and steroids, which contribute to immune development and possess antioxidant activity. This study aimed to analyze the effect of dietary spirulina supplementation on the microanatomical structure of the spleen in male Peking ducks, including organ weight, capsule thickness, follicle number and diameter, white pulp area and diameter, as well as germinal center diameter. The study employed a Completely Randomized Design using 25 male ducks divided into five treatments (0%, 2.5%, 5%, 7.5%, and 10%) with five replications. Histological preparations were made using the paraffin method and Hematoxylin–Eosin staining. Data were analyzed using one-way ANOVA followed by Duncan's test at a 5% significance level. The results showed that all variables were not significantly different except for the germinal center diameter, which increased significantly with the 7.5% spirulina. The addition of spirulina powder in the diet did not demonstrate potential to enhance the immune system of Peking ducks based on spleen organ weight and its microanatomical structures.

Keywords: poultry, germinal center, phytochemicals, B lymphocytes, immunomodulator