

ABSTRACT

Sasmito Pandhu Wicaksono. 24020119130047. Effects of Dietary *Spirulina* sp. Powder Supplementation on the Morphometry of the Reproductive Tract of Pengging Ducks (*Anas platyrhynchos*). Supervised by Sunarno and Kasiyati.

Pengging ducks (*Anas platyrhynchos*) are an Indonesian local poultry breed with considerable potential as egg producers and a source of animal protein. Improving the nutritional quality of feed through supplementation with natural feed supplement, such as *Spirulina* sp., which is rich in protein, essential amino acids, vitamins, minerals, essential fatty acids, and antioxidants, is expected to support the development of reproductive organs. This study aimed to analyze the morphometry of the reproductive tract of pengging ducks, including oviduct weight and the lengths of the infundibulum, magnum, isthmus, uterus, and vagina following dietary supplementation with *Spirulina* sp. Twenty-four female pengging ducks aged 21 weeks were assigned to six dietary treatments with four replicates per treatment. The control group (P0) received no *Spirulina* sp. supplementation, while P1, P2, P3, P4, and P5 received a standard diet supplemented with 1.5%, 3.0%, 4.5%, 6.0%, and 7.5% *Spirulina* sp. powder, respectively. Oviduct weight was measured using a digital balance with an accuracy of 0.01 g, and the length of each oviduct segment was measured using a ruler. Data on oviduct weight and the lengths of each reproductive tract segment (infundibulum, magnum, isthmus, uterus, and vagina) were analyzed using analysis of variance (ANOVA). Significant differences were further evaluated using DMRT at a 95% confidence level with SAS 9.0 software. The results showed that oviduct weight, magnum length, and isthmus length were significantly affected ($p < 0.05$), whereas the lengths of the infundibulum, uterus, and vagina were not significantly affected ($p > 0.05$). In conclusion, dietary supplementation with *Spirulina* sp. powder has the potential to support the morphometric development of the reproductive tract of pengging ducks (*Anas platyrhynchos*), which plays an important role in egg formation.

Keywords: pengging duck, spirulina, feed supplement, oviduct