

ABSTRACT

Shinta Aulia Al Rasyid. 24020121140149. Histomorphometry of the Intestinal of Tilapia (*Oreochromis* sp.) After Feeding Oil Palm Fruit. Under the guidance of Kasiyati and Rasyidah Fauzia Ahmar.

Tilapia farming continues to grow due to high market demand, but the biggest challenge is feed cost, which account for more than 60% of total production, requiring cheap and nutritious alternative ingredients. Palm fruit has the potential to be used as feed because of its high energy content, although the fibre and antinutrients contained within may affect fish digestive health. There has been more research on the use of palm fruit, while studies on intestinal histomorphometry, such as musocal thickness, villi length, and goblet cell count, are less common. This study aimed to determine the effect of palm fruit in feed on the intestinal histomorphometry of tilapia. The parameters observed included intestinal weight, villi length, villi thickness, submucosa thickness, muscularis thickness, serosal thickness, lumen diameter, and goblet cell count. The method used was a completely randomised design (CRD) with two treatments, namely K0 pellet feed and K1 palm fruit, each with 10 replicates. Histomorphometric observations showed that feeding a palm oil-based diet did not cause pathological changes in the serosal layer or lumen diameter, but had a significant effect on increasing the number of goblet cells and musocal thickness. This increase indicates an adaptive histological response in the form of a musocal protection mechanism and intestinal adjustment to optimise digestive function in response to fibrous feed. It can be concluded that feed based on oil palm fruit without processing can cause changes in the histological structure of the tilapia intestine, thus potentially disrupting nutrient absorption.

Keywords: *alternative feed, histological adaptation, antinutrients, pathological.*