

## ABSTRACT

**Zakiyyah Rana Danti. 24020120140129.** Microanatomy of the Broiler Chicken Liver (*Gallus gallus domesticus*) After inclusion of a Combination of Spirulina Powder as a Feed Additive and Liquid Nanokitosan as a Beverage. Under the guidance of Kasiyati and Muhammad Anwar Djaenlani.

Spirulina flour was a natural feed additive that contained bioactive compounds, had no side effects, and served as an antibiotic substitute for livestock. Nanokitosan was a polymer compound derived from chitin and composed of amine groups. The use of these two additives supported and enhanced the growth, productivity, health, and digestibility of livestock. The purpose of this study was to analyze the effects of spirulina flour as a feed additive, liquid nanokitosan as a drink, and their combination on the microanatomy of broiler chicken livers. The study employed a Complete Randomized Design (CRD) with a 3×2 factorial pattern. The first factor was spirulina flour as a feed additive with three doses: 0%, 3%, and 6%. The second factor was liquid nanokitosan as drinking water with two doses: 0% and 5%. Each treatment group consisted of four replicates. The treatment groups were S0N0, S0N5, S3N0, S3N5, S6N0, and S6N5. The measured variables included absolute and relative liver weight, hepatosomatic index (HSI), hepatocyte diameter, and central vein diameter. The data were analyzed using Analysis of Variance (ANOVA) with a significance level of 5% ( $\alpha=0,05$ ). The results showed that the doses of spirulina flour and nanokitosan did not significantly affect liver weight (absolute and relative), hepatosomatic index (HSI), and hepatocyte diameter, but nanokitosan affected the central vein diameter. The interaction between spirulina and nanokitosan also did not significantly influence these variables. The conclusion of this study was that the administration of 5% liquid nanokitosan functioned to enhance nutrient absorption in the intestines and improve the transport of metabolic products in broiler chickens, as evidenced by the increased diameter of the central vein in the liver of broiler chickens.

**Keywords:** *Antioxidant, central vein, hepatocyte, hepatosomatic index*