

ABSTRACT

Rida Arwanda Gunawan. 24020120140158. Leukogram of Broiler Chickens (*Gallus domesticus*) after Consuming Feed with Spirulina Flour Additives (*Spirulina* sp.) and Liquid Nanochitosan. Under the guidance of Muhammad Anwar Djaelani and Sunarno.

Single feed additives used in broiler farming have not effectively boosted immunity and reduced metabolic stress levels. *Spirulina* and liquid nanocitosan can be used as feed additives and have potential as antioxidants, immunostimulants, and antimicrobials that function to modulate immunity and minimize metabolic stress in broilers. This study aims to analyze the effect of *Spirulina* meal feed additive and liquid nanocytosan as drinking water, and their interaction on broiler leukogram. Data were obtained from 42-day-old non-sexed broiler chickens totaling 24 birds that were treated for 26 days. The study used a 3×2 factorial completely randomized design consisting of 6 treatments with 4 replications, namely the control group and the basal feed group given 0%, 3%, and 6% *Spirulina* flour, and liquid nanocitosan concentrations of 0% and 5%. Giemsa staining blood smear preparations were observed with 40x10 magnification. Data were analyzed using Two Way ANOVA with a significance level of 5% and Friedman Test. The results showed normal leukocyte morphology, *Spirulina* flour had no significant effect ($P>0.05$) on the total number of leukocytes, heterophils, and lymphocytes, liquid nanokitosan had a significant effect ($P<0.05$) on the number of leukocytes and lymphocytes, and there was no interaction between *Spirulina* flour and liquid nanokitosan. The conclusion of this study was that 3% and 6% *Spirulina* maintained the leukogram profile, 5% liquid nanocitosan as drinking water decreased the total number of leukocytes and lymphocytes, *Spirulina* and liquid nanocitosan did not interact with each other and did not cause a decrease or increase in the broiler leukogram profile.

Key words: feed additives, leukocytes, differential leukocyte, heterophils, lymphocytes, H/L ratio