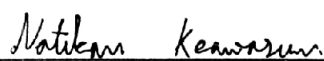
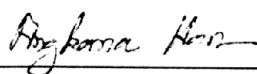


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Two studies were conducted to investigate effect of DL-Methionine (DL-Met) and Methionine Hydroxy Analogue (MHA) on growth performance and nutrient utilization of male broiler chickens. First experiment was carried out to investigate the effect of methionine sources on growth performance and carcass quality. Chicks were separated into 3 groups (raised in floor pens) consisted with 6 replications (25 chicks per replicate) and experimental diets were given as follow; 1. diet deficient in methionine (negative control group), 2. diet supplemented with DL-Met and 3. diet supplemented with MHA (1.25 time of DL-Met group). It was found that adding methionine sources significantly improved growth performance, carcass quality and outer breast meat, while reduced abdominal fat content ( $P<0.05$ ). However, there were not significant differences between two sources of methionine on these parameters. In second experiment, in order to investigate effect of methionine sources on visceral organs and nutrient utilization, number of experimental groups and diets were similar to the first study. Experimental diets were offered from 1 to 42 days of age. Chicks were raised on floor pens from 1 to 35 days of age, and then during 35-42 days of age, eight chicks of each group were kept in an individual metabolic cage. Feed intake and excreta were collected daily. The results showed that adding DL-Met decreased gizzard compare to MHA supplementation ( $P<0.05$ ). Adding DL-Met group had significantly less caecum and liver weight than the un-supplemented group ( $P<0.05$ ). Both of adding DL-Met and MHA groups had jejunum weight (% of body weight) smaller than un-supplemented group ( $P<0.05$ ). However, MHA supplementation significantly decreased heart size ( $P<0.05$ ). There were not effects of adding methionine source on liver chemical composition. Adding MHA increased fecal ash, Ca and P, while DL-Met supplementation significantly increase fecal fat. DL-Met supplementation increased N utilization and tibia bone ( $P<0.05$ ) but MHA decreased P and Ca retention in tibia bone. It was found that adding MHA significantly enhanced uric acid in plasma ( $P<0.05$ ).



Student's signature



Thesis Advisor's signature

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