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The effects of seaweed-based pellet binders on growth performance, feed efficiency and carcass characteristics in broilers

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ABSTRACT

Good quality pellets may improve feed efficiency and animal growth performance. In this study, the effects of the addition of seaweed binders (*Kappaphycus alvarzeii* and *Sargassum polycystum*) on growth performance and feed efficiency in broiler chickens were examined. The physicochemical properties and physical test of formulated broiler chicken feed in addition of potent seaweeds as binder were also examined. *K. alvarzeii and S. polycystum* were evaluated as binding agents in pelleted diets for broiler chicken over a period of 35 days. The experimental design was randomized complete block with 8 treatment diets and 6 replications per treatment. Broiler chickens were weighed, and the feed intake were taken weekly to determine the growth performance and feed efficiency. Feed formulations for broiler chicken with both seaweeds' inclusions at different dietary levels (2, 5 and 10 %) were prepared. The parameters measured were body weight, feed intake (FI), feed conversion ratio (FCR) and carcass measurements. Based on the physicochemical and physical test, pellet quality (PDI and hardness) was observed better in 5% *S. polycystum* diets, which reflected on better results of feed intake (FI) on birds. The results showed that broiler fed with 2 % of *S. polycystum* showed the highest body weight. Following this, carcass evaluation was conducted on day 36 to record any effects of seaweeds towards body parts of birds. Based on the results, this study showed that inclusion of both seaweeds in broiler's diet has no significant effect on carcass traits.

1. Introduction

Animal feed industries are relying more on feed quality, which gives advantages in cost of production, reducing feed dustiness and wastage and most importantly in improving bird performance. Pellets that can withstand rough handling such as during transportation, storage, moving in feed lines without excessive breakage are considered as high-quality pellets. There are several factors that could affect pellet quality but the main factor that gives effect on feed quality is feed formulation which involves raw materials and additives used in the formulation. Starch and its gelatinisation are the most key factor in achieving the desired pellet quality. Inclusion of other binding agents such as water (simplest binder), gelatine, hemicellulose extract can also improve pellet quality (Abdollahi et al., 2013).

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