The Effect of Ragi Tape Fermentation Products in Diets on Nutrients Digestibility and Growth Performance of Bali Drake

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ABSTRACT

This research was carried out to study the effect of fermentation ragi tape products (rice bran, pollard, soybean-hull, and cocoa-pod fermented) in diets on nutrients digestibility and growth performance of Bali drake aged 4-10 weeks. The design of experiment used a completely randomized design (CRD) with nine treatments and six replications. There were 10 birds in each replication with relative homogenuous body weight (359±12,75 g). The diets were formulated to 17% crude protein and 2900 kcal ME/kg as a control diet (A), diets with 15% rice bran (B), 15% rice bran fermented by 0,30% yeast culture (C); 15% pollard (D), 15% pollard fermented by 0,30% yeast culture (E), 15% soybean-hull (F), 15% soybean-hull fermented by 0,30% yeast culture (G), 15% cocoa-pod (H), and 15% cocoa-pod fermented by 0,30% yeast culture (I), repectively. Diets and drinking water were provided *ad libitum*. Variables were observed in this experiment are nutrient digestibility (protein, crude fibre, and energy), feed consumption, live weight gains (LWG)s, and feed conversion ratio (FCR). The results of this experiment showed that fermented rice bran, pollard, and soybean hull in diets, resvectively did not effect on feed consumption, but increasing LWGs compared with unfermented feeds. The nutrient digestibility (protein, crude fibre, and metabolizable energy) and FCR however decreased. Birds offered fermentation ragi tape products (treatment C, E, G, and I) had higher (P<0,05) nutrient digestibility and growth performance compared with those of control and unfermented products. It is concluded that inclusion of fermentation ragi tape products (rice bran, pollard, soybean-hull, and cocoa-pod fermented) in diets could increase nutrient digestibility and growth performance of Bali drake aged 4-10 weeks.

Key words: yeast culture, dietary fiber, digestibility, performance of drake

INTRODUCTION

Aspergillus oryseae (AO) and *yeasts*, particularly *Saccharomyces cereviseae*, have been used as probiotics by many workers (Piao *et al*., l999). Both *Aspergillus spp*. and *Saccharomyces* belong to the *Ascomycoyina* subdivision and have many industrial applications in the brewing, destilling, ang baking industries (Han *et al.,* 2001).

Yeast culture product, which have some fermentation ability consist of yeast (*S. cerevisae*) and the media which the yeast grew on (Bidura *et al.,* 2008a). Piao *et al*. (l999) showed that 0,10% yeast added to a diet could reduce animal wastes, and similar results were reported by Park *et al*. (l994). But, Piao *et al*. (l999) reported no significant improvement in weight gain, feed intake, and feed efficiency with 0,10% yeast culture. Feeding live yeast to broiler breeder reduced colonization of salmonela in their ceca and improved posphorus utilization in growing chickens.

The potensial of forages by-products as energy sources for poultry depends considerably on such factors as cell wall content, degree of microbial fermentation in the large intestine, and extent of absorption and utilization of the volatile acids produced (Kahlique *et al.,* 2003). Agro-industry by-product is one such product abundantly and cheaply available during the season. These toxic factors are trypsin inhibitor, lectin (hemaglutinin), phytic acid as phytate, and crude fiber. These anti-nutritive factors have been reported to reduce feed intake and depress performance of poultry.

Knudsen (2001) reported that dietary fiber (DF) has been defined as the complex